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## Business Model Innovation with Platform Canvas

Krista Sorri<sup>1</sup>, Marko Seppänen<sup>2\*</sup>, Kaisa Still<sup>3</sup>, Katri Valkokari<sup>4</sup>

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### Abstract

**Purpose:** This paper offers a literature review and explores a business model innovation for platform business. It also suggests a practical tool, Platform Canvas, to support implementation activities.

**Design/Methodology/Approach:** A literature review was conducted in fall 2016 that resulted in the tentative canvas approach, which was evaluated in seven real company cases.

**Findings:** The study identified the eight most important characteristics of a platform business model innovation. To support the innovation and development of successful business models in a platform ecosystem, the Platform Canvas tool was created. With guiding questions, Platform Canvas allows for an ecosystemic approach to business model innovation: it helps to understand the value creation and capture for multiple actors.

**Originality/Value:** The unique result is a practical tool, Platform Canvas, which facilitates business model creation in platform ecosystems.

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Keywords: Platform, ecosystem, business model, Platform Canvas, literature review

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## Introduction

Google, Facebook, Amazon, and Apple—these and many other platforms are disrupting traditional businesses as they transform the existing value creation processes and customer behavior (e.g., Miguel & Casado, 2016; Simon, 2013). By doing so, they are transforming the structure of major industries and forcing traditional incumbent companies to re-evaluate their current business models, simultaneously allowing opportunities for new entrants. Participating in platform ecosystems is becoming an important way for companies to gain more revenues and profits, as platforms with their inherent network effects enable exponential growth. Platforms, especially digital platforms, are used as a business model; examples are Alibaba and General Electric's Predix.

The success of platforms is explained by sustainable and repeatable interactions (Choudary, 2015) that breed the growth or emergence of an ecosystem. Our emphasis on the platform ecosystem uses a novel theoretical framework by Jacobides *et al.* (2018), which argues that ecosystem emergence is enabled by modularity and complementarities. As they emphasize, "*allow a set of distinct yet interdependent organizations to coordinate without full hierarchical fiat*", hence seeing the ecosystem as "*a set of actors with varying degrees of multi-lateral, non-generic complementarities that are not fully hierarchically controlled*" (Jacobides *et al.*, 2018, p.2264). According to them, the core of ecosystems lies in combinations of modular complementarities and similarity of shared rules of operation.

Digital technology expands reach, convenience, speed, and efficiency tremendously compared with the traditional way (Parker *et al.*, 2016). Although we are concentrating on digital platforms, the platform ecosystem is considered from the business perspective rather than as a technical issue (Iivari *et al.*, 2016). Hence, for the purposes of the use of technology, we agree with Chesbrough (2010, p. 354): "*Technology by itself has no single objective value. The economic value of a technology remains latent until it is commercialized in some way via a business model.*"

In this study, we explore business model innovation with the overall objective of value creation and/or capture (Wirtz and Daiser, 2017; Clauss, 2016) in the context

of platform ecosystems. Accordingly, we employ the old but still valid definition by Weill & Vitale (2001), which says that a business model is "a description of the roles and relationships among a firm's consumers, customers, allies, and suppliers that identifies the major flows of product, information, and money, and the major benefits to participants." With this ecosystemic approach, we proceeded to develop a tool – Platform Canvas—and a supporting set of questions to help management and scholars to innovate their business models in platform ecosystems.

The paper is structured as follows: first, we present the main characteristics of a platform ecosystem. Second, we introduce the research design and data. Third, we represent the results and the developed tool, Platform Canvas. Finally, we discuss the challenges of the platform creation process and how the Platform Canvas tool can help facilitate this process, and conclude by summarizing avenues for further research.

## Platform Ecosystems for Novel Value

Business model innovation considers the business model rather than products or processes as the subject of innovation (Baden-Fuller & Haefliger, 2013). In more detail, business model innovation can cover various aspects: (1) a value creation innovation, like new capabilities, new technology/equipment, new partnerships, new processes – or (2) a new proposition innovation, consisting of a new offering, new customers and markets, new channels, and new customer relationships – or (3) a value capture innovation, that could include new revenue models and value cost structures (Clauss, 2016).

### Platforms with modularity and complementarity

Platforms give companies new opportunities by changing the traditional business rules and how companies interact with each other (Vazquez, 2016). Their purpose is to facilitate the multi-party exchange of products, which can be goods, services, or even social currency, creating novel value and at the same time allowing value capture. Platforms can also be considered matchmakers that bring members of different groups together. They sell access to the target group(s)

(Evans and Schmalensee, 2016). In one way or another, platforms provide more value for customers by helping companies to create new integrated services (Ju, Kim and Ahn, 2016).

Digital platforms are “*software-based external platforms consisting of the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate*” (Ghazawneh and Henfridsson, 2015, p.199). The digital platform can, therefore, be described as the technical infrastructure to which the ecosystem participants integrate (Iivari *et al.*, 2016).

A platform ecosystem can be seen as a collection of firms interacting with a contribution to the complements (de Reuver *et al.*, 2016). An interactive platform ecosystem is created using technology to connect ecosystem members, such as people, organizations, and their resources. Hence, the platform ecosystem is oftentimes seen as a two- or multisided marketplace where value is created for all members of the network (Parker *et al.*, 2016)

To succeed in digital platforms and the larger entity of the platform economy, participants need to recognize their roles in the platform ecosystem. Platforms leverage the ability to create and scale value outside the organization in an ecosystem (Choudary, 2015). Platform ecosystems are clearly business ecosystems. According to Rong *et al.* (2015), an ecosystem can be considered to be an established value network where the roles are fixedly interconnected and where the interconnected stakeholders have a shared faith and in which they co-evolve. Therefore, companies need to understand that they cannot provide the value alone and that their actions have an impact on the overall ecosystem in which they operate. Thus, for the ecosystem members to co-evolve, their capabilities need to be linked with the actions of the other participants (Moore, 1996).

### **Platform as a business model innovation**

The platform has been presented as a business model innovation that enables external producers and consumers to create value together by interacting with each other (Choudary, 2015). Its ecosystem comprises the platform’s sponsor plus providers of complements

that make the platform more valuable for the customers, considering how the actors—including users—are organized around a platform (Jacobides *et al.*, 2018).

What is the new business model innovation when technical modularity allows all these independent components of a system to be produced by different producers (Jacobides *et al.*, 2018)? The opportunity for a platform often arises when there is too much friction in the market, which hinders the different user groups from dealing with each other (Evans and Schmalensee, 2016). The aim of the platform is then to reduce barriers to participation—that is, to reduce friction in order to get new participants to join both sides of the market. By doing so, the platform enables sustainable and repeatable interactions by balancing their quality and quantity (Choudary, 2015). Platforms provide opportunities to tackle the innovation management challenge of allowing value co-creation with users (or consumers). They allow for innovation to take place beyond the province of in-house experts and research and development laboratories; when customers start to engage and be more interactive, new forms of value appear (Parker *et al.*, 2016). In other words, a platform as a business model innovation requires ecosystem level considerations in order to explore value co-creation and capture innovations (Claus, 2016).

## **Research Design**

There is a demand for research into the transformative and disruptive impact of digital platforms on organizations and their business models (Parker *et al.*, 2016), for more research exploring digital platform innovation (de Reuver *et al.*, 2017) as well as for research on ecosystem value creation/capture (Jacobides *et al.*, 2018). The purpose of our study is to solve this need for supporting business model innovation in the context of platform ecosystems. An extensive literature review allowed us to break down and identify the critical characteristics of platform ecosystems. We then proceeded to formulate the most important criteria in an easy-to-use format with a construct of Platform Canvas.

## **Literature Review**

We first identified the relevant characteristics, frameworks, and models in the extant platform literature to obtain a pre-understanding of the field, following

a similar procedure to that of Wirtz and Daiser (2017). This was done with a comprehensive literature review, conducted in fall 2016, combining the keywords “digital,” “platform,” “characteristic,” “ecosystem,” “element,” “disruption,” and “value.” The review process included an iterative search of references and citations available in research papers in the Web of Science database. This snowballing methodology complemented the search results by identifying original books and articles (Wohlin, 2014).

During the comprehensive literature review, 16 sources—journal articles and books—were identified as original sources. The original sources were published between 2002 and 2016. From these original sources, we identified and grouped the characteristics that were presented as essential to the meaning described in the source. This grouping resulted in 18 critical characteristics for establishing a platform ecosystem (see Table 1). The descriptive names of these were derived and synthesized from the terms used in the original sources with broad synonyms.

### **Crafting the Platform Canvas tool**

As the Business Model Canvas (Osterwalder and Pigneur, 2010), complemented by the book *Value Proposition Design* (evaluated in the recent study by Kyhnau and Nielsen, 2015), has become the de facto diagnostic tool for understanding the value creation potential of businesses, our goal was to develop a similar construct that is easy to use and emphasizes the special characteristics of platform ecosystems. We are aware of multiple other constructs that attempt to do this (for example, digital platform canvas<sup>1</sup>; the platform design canvas<sup>2</sup>; and Platform Canvas<sup>3</sup>. However, they are not research-based.

The previously described literature search offered 18 critical characteristics. For a more manageable number of characteristics to be included in the canvas, these were then arranged according to their prevalence in the sources. In the first list of characteristics, the prevalence varied between 3 and 15; the mean was 6.8 and

the median was 5. The second list was compiled based on the three most cited sources and the characteristics emphasized by these sources. The first six characteristics were the same in both lists. The seventh was different, and by accepting both of these, we ended up with the eight most essential characteristics.

Accordingly, we created a first version of the template, which was Microsoft Excel-based and had a cell for each of the eight characteristics. Each of the cells also included a couple of questions to clarify the meaning of the terms used.

The first version was tested by using it as a supporting tool for interviewing companies about their platform ecosystem activities and business model innovation. The canvas template was first separately filled by representatives of seven Finnish manufacturing companies with their in-house knowledge and by a researcher using publicly available data. Then, the researcher interviewed the company representatives for 1-2 hours. At the end of each interview, the company representatives were asked to give feedback on the canvas itself.

During this initial use, it became clear that the platform participants have to have a deep and detailed knowledge of the market in which they are participating before they can benefit from Platform Canvas. It should be noted that all of the companies had created the platform based on their own needs. Only one company mentioned that they had been obliged to re-visit their platform strategy since they had noticed the platform did not respond to the needs of the presumed participants.

These eight characteristics seemed to bring structure to the interviews, for both the interviewer as well as the interviewees. With this validation of the canvas content, the eight characteristics were developed into the Platform Canvas tool. However, as some of the terms needed clarification in order for the company representatives to be able to answer, those changes were incorporated into the Platform Canvas. The visual elements and their positions were also added based on insights from the research. For example, an image of a group was placed to highlight the fact that platforms are about groups of people; both a heart and a dollar sign were added to emphasize different types of value.

<sup>1</sup> <http://icsb.nl/artikelen/new-business-model-canvas-for-digital-platforms/>

<sup>2</sup> <https://platformdesigntoolkit.com/toolkit/>

<sup>3</sup> [https://www.slideshare.net/YearOfTheGoat/the-platform-canvas-learn-how-to-build-platform-business-models-in-45min](https://www.slideshare.net/YearOfTheGoat/the-platform-canvas-learn-how-to-build-platform-business-models-in-45min;);

PLATFORM KEY CHARACTERISTICS																Source reference		
Core interaction	Simplicity	Maintainability	Tools for consumption	Metrics	Filtering	Facilitate	Creation Tools	Traction	Cost of multihoming	Matching	Monetizing	Change tolerance	Value	Producers	Consumers		Governance	Network effects
3	3	3	2	3	4	4	4	5	5	6	7	9	11	12	12	13	15	
x				x	x	x		x		x	x	x	x	x	x	x	x	Bonchek M., Choudary, S. P. (2013) Three elements of a Successful Platform Strategy
						x			x	x	x	x	x	x	x	x	x	Moazed, A. (2016) What is a Platform?
			x				x	x		x	x		x	x	x	x	x	Simon, P. (2011) The Age of the Platform
	x	x		x					x			x		x	x	x	x	Abeyasinghe A. (2016) Building a digital enterprise-learning from experience
								x		x	x	x	x	x	x	x	x	Boudreau, K. J., Jeppesen, L. B. (2014) Unpaid crowd complementors: The platform network effect mirage
	x				x	x		x			x	x	x			x	x	Choudary, S.P. (2015) Platform Scale
		x		x		x	x	x		x		x	x				x	Cusumano, M. A., Gawer, A. (2002) The Elements of Platform Leadership
		x	x		x		x						x	x	x	x		Westhead, M. (2014) Platforms - Two/multi-sided markets
									x		x		x	x	x	x	x	Edelman, B. (2015) How to Launch Your Digital Platform
									x			x	x	x	x	x	x	Abeyasinghe A. (2015) Platform for digital transformation
x									x		x			x	x		x	Hyatt, M. (2016) Why you need a platform to succeed
x					x		x						x			x	x	Tiwana, A. (2013) Platform ecosystems
	x											x			x	x	x	Evans, D., S., Schmalensee R. (2016) Matchmakers
										x				x	x	x	x	Evans, D., S., Hagiu, A., Schmalensee R. (2006) Invisible Engines- How Software Platforms Drive Innovation and Transform Industries
												x		x		x	x	Parker,G et al (2016) Platform Revolution
													x	x	x		x	Kouris, I., Kleer, R. (2012) Business models in two-sided markets: an assessment of strategies for app platforms

Table 1: Summary of key platform elements identified in the literature review

## Platform Canvas

Platform Canvas operationalizes the eight key characteristics of business model innovation for a platform ecosystem identified by the literature review. These characteristics are presented here to understand the main issues that companies need to consider when planning their activities in the platform ecosystem. Hence, the presentation order does not reflect the popularity of

the characteristic in the literature. In addition, the questions developed to guide the use of Platform Canvas are explained.

### Eight key characteristics

The core interaction of the platform, which refers to the exchange of value, is the single most important type of activity in the platform ecosystem (Parker *et al.*, 2016)

and is accordingly central in the canvas. First, it brings forth the characteristics of **(1) value**, describing the value creation potential of the platform, and **(2) monetizing**, as capturing the value. The literature refers to this for example by creating feasible pricing models that maintain or even increase the traction toward the platform (Parker *et al.*, 2016, pp. 106–110).

The core interaction also introduces the two sides of the platform: **(3) producers** and **(4) users**. This emphasis on at least two sides has also been addressed by the term “bilateral market power of the platform” (Kouris and Kleer, 2012); although with added participants the term “multi-sided markets” is also used (Evans and Schmalensee, 2016). Different scholars refer to the *producer* of the value using different terms such as “*complementors*” and “market side 1”; some even combine all sides and refer to them only as participants. Researchers often refer to the value *user* side as consumers, customers, and end users. All of these terms are also used in traditional pipeline businesses, although the roles do not mix in such businesses as they do in platform ecosystems.

**(5) Filtering** (*including matching*) allows for making the value exchange efficient, simultaneously allowing the platform to attract participants (Parker *et al.*, 2016, pp. 296–297), and is considered crucial for all participants in the platform ecosystem. It describes the algorithm’s ability to filter a massive amount of data in a way that enables the quick and precise matching of the value producer and the value user. Hence, these software-based tools enable the exchange of value between the right producers and appropriate consumers. Accordingly, the platform owner aims to build and maintain an ecosystem where the platform will continue to attract participants; this is partly ensured by providing the desired match easily.

“The platform rules” for all participants are addressed with **(6) governance**. The literature describes governance with several terms such as control, rules, access control, and trust. With an elaborate governance system of laws, enforcement, and penalties (Evans and Schmalensee, 2016), the platform can facilitate value co-creation and match the most compatible users with each other.

**Resilience (7)** (*including change tolerance and maintainability*) describes the platform’s ability to adapt

to a changing environment. It has also been referred to as modular, evolvable, durable, and plug-n-play. All of these emphasize the importance of being adaptive to change. However, a company which is highly adaptive to change can even cause market turbulence for its own benefit (Simon, 2013). Maintainability of the system can also be considered to be part of resilience. It includes three perspectives: a) maintaining compatibility with future complementary products (i.e., platform integrity) when new technologies arise, b) developing the platform while maintaining compatibility with past complements, and c) maintaining platform leadership despite changes (Cusumano and Gawer, 2002). With this goal, aspects of boundary resources (both technical and co-operative) need to be addressed.

The final and most crucial characteristic of a platform is the **(8) network effect**. This refers to the ability to increase the scale of business significantly with minimal investment (Choudary, 2015, pp. 74–75). Utilizing the network effects is essential for the platform ecosystem to exploit its full potential.

### Process with guiding questions

As with the business model canvas, a list of questions to explore the main characteristics (called “blocks” in Osterwalder and Pigneur, 2010) was developed. The questions are intended to help companies to innovate and evaluate their platform business models from different perspectives, thus addressing the ecosystemic nature of platforms. Each characteristic can be defined by answering the facilitative questions (see Table 2). We propose that these questions may also help platform ecosystem participants consider their positions and prospects in the platform: they may find these beneficial due to the differences in platform thinking versus traditional business thinking. We further propose that Platform Canvas and the guiding questions can lead the participants through the whole innovation process, or can be used to explore certain aspects of the platform.

To address the core interaction, both the value for producer and value for users need to be described in detail and understood thoroughly. It is also important to understand that the role of the user may vary in different interactions. Hence, with regard to *value*, it is not enough to think which friction the platform reduces;

Platform Ecosystem Canvas v02

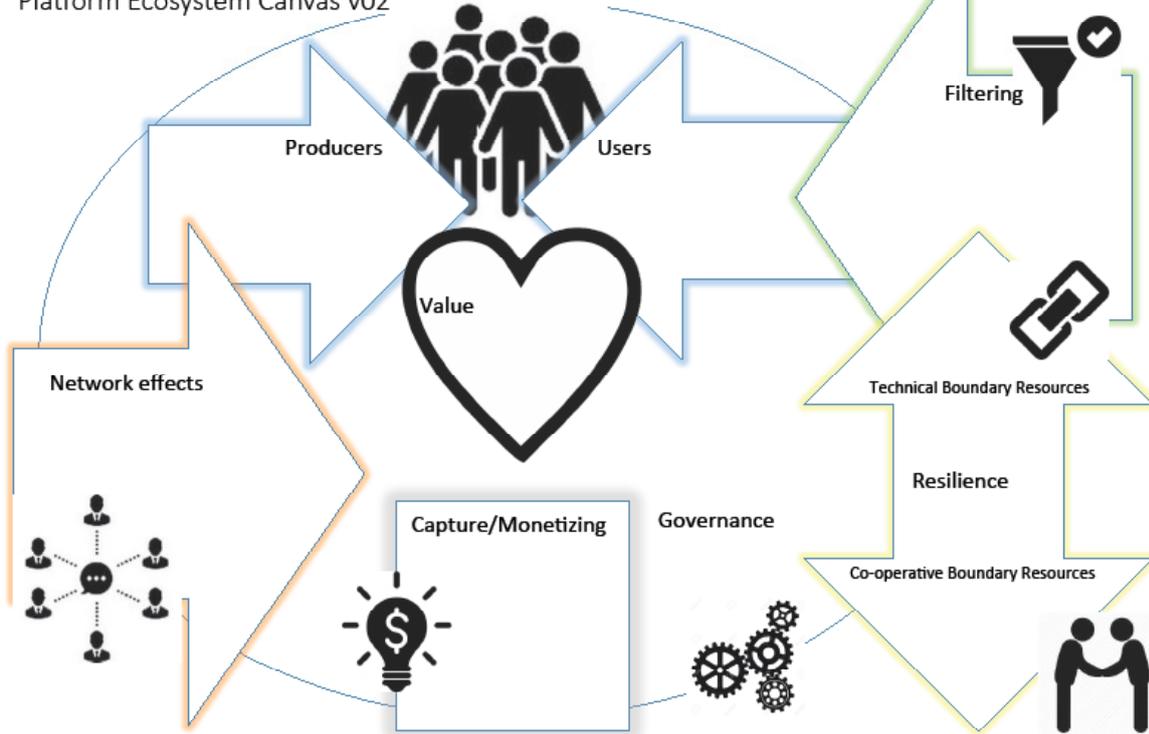


Figure 1: Platform Canvas

it is equally important to identify all the different values created by the interaction and how the platform attracts users on all sides. It should be remembered that the value may be monetary, but in many cases, it is something completely different (like information).

Second, the opportunities related to the network effects must be understood. Whether the effects are direct, indirect, or both, and what kinds of scalability requirements the platform faces because of this, must be addressed. The platform owner must have an idea of how the tools

Characteristics	Questions
Value producers	Who are the value producers and what motivates them to create the value? Through which channels do they produce the value?
Value users	Who are the value users, and what motivates them to consume the value? Through which channels do they consume the value?
Value	What are the different values that are created? How does the platform attract participants? How is the chicken-and-egg problem solved? Which friction does the platform reduce?
Filters	What data are acquired to match producer and user? Which filters does the platform need to serve the relevant content to consumers and connect them to the relevant value producer?
Network effects	Which types of network effects are achieved?
Value capture	What currency does the user provide to the producer in exchange for value? How does the platform capture some portion of this currency?
Governance	What are the tools for lowering the barriers to entering the platform? Which creation/curation/ customization/ consumption tools does the platform provide?
Resilience	To what extent are the boundary resources defined?

Table 2: Guiding questions

and services in the platform solve the chicken-and-egg problem (attracting participants on all sides of the market to the platform) and how the platform keeps the interest of the users. This affects the requirements for the filtering abilities of the platform.

After these aspects have been reviewed and planned, the system side of the canvas can be completed. The management first needs to define the governance and curation aspects. The final phase of the design is to ensure the resilience of the platform. This is done by opening up both the technical and co-operative boundary resources. The platform owner should have a clear picture of how the tools and services provided help facilitate the interactions, value creation, and value exchange, which can then guide the finding of appropriate technology partners for the platform.

## Discussion and Conclusions

Platform Canvas is intended to guide the platform ecosystem participants—platform sponsors or owners, platform complementors, and other service providers—in their business model innovation. One could describe Platform Canvas as a “*poka-yoke type*” (Shingo, 1986) error-proofing tool for organizations planning their activities in a platform ecosystem. As poka-yoke aims to eliminate the possibilities of causing a defect to a product or process by offering a method for involving members of the production or process, for example, the canvas aims to offer a method to explore business model innovation in a platform ecosystem by offering a template for involving ecosystem participants. Overall, we propose that with its eight key characteristics it can be used to support innovation in a similar manner to the Business Model Canvas when establishing a platform ecosystem or evaluating possible needs in re-thinking the ecosystem (Osterwalder and Pigneur, 2010).

### The contribution of the canvas

The canvas helps challenge the platform participants to open up their thinking. It provides the possibility to see the big picture and simultaneously drill down to a more detailed level. Hence, the canvas provides an understanding of the complexity related to platform ecosystems. Platform participants need to understand the dual role of individuals (one can represent both value producer and value user—i.e., one can be a value

prosumer). Especially in cases where participants are seeking to understand the impacts and possibilities of business model innovation in an ecosystem, Platform Canvas can help them find new perspectives for understanding the possibilities of the platform ecosystem (for API economy, see e.g., Huhtamäki *et al.*, 2016). The initial use of the eight characteristics in the manufacturing industry validated this (Sorri, 2016). As the emphasis was on re-evaluating business models, the importance of prior market knowledge was noted.

The canvas has also been used to study the expectations that startups have in relation to their platform-based business models and their abilities to support the core interaction and capture value from it (Korhonen *et al.*, 2017). This study showed that many startups see themselves as connectors of users and producers, and hence confirmed the importance of ecosystem thinking in a platform-based business (Parker *et al.*, 2016).

From the business model perspective, according to Chesbrough (2010), the most important functions that a platform ecosystem should fulfill are to articulate the value proposition, detail the revenue mechanism, and describe the value network. These have been included in Platform Canvas, which also addresses the ecosystemic nature of platforms—the fact that in ecosystems there are multiple business models in play that need to be considered. Furthermore, we claim that the canvas contributes to the business model literature with the inclusion of network effects, which are presented as necessary and specific to platform ecosystems. For example, a comprehensive literature review on business models by Zott *et al.* (2011) listed the components of e-business models found in the existing research at that time, and none of the scholars considered the network effects to be important.

### Limitations of the canvas

The eight critical characteristics of a platform ecosystem were identified through an inclusive literature review and based on how they often they appeared in the literature. As digital platforms are becoming increasingly complex research objects (Evans and Basole, 2016), their research is also becoming complex and takes place within information systems, innovation management, and economics (de Reuver *et al.*, 2017). Accordingly, there is also a great deal of variation within the sources regarding

which characteristics are considered important when developing successful digital platforms. This stems for example from the bias towards successful cases, which are studied ex-post (de Reuver *et al.*, 2017).

The canvas has been mostly used internally, which alleviates the challenges with disclosure issues between various organizations. However, for an even better grasp of the complexities related to the platform and also for a better in-depth analysis of the possibilities of novel value creation, additional research on canvas utilization at the ecosystem level could increase, for example, understanding of the emergence and resilience of an ecosystem.

The cases of this research are all from the manufacturing industry as well as from startups. Our assumption was that the utilization of the canvas is not limited by the domain. However, more research needs to be conducted to examine this in more detail. While the aim of Platform Canvas is to help business managers, managers must still familiarize themselves with the basic theories and fundamental differences of the platform business model compared with the traditional ones.

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## Communicating The Business Model at a Swedish Start-Up: An Interpretive Study

Emelie Havemo<sup>1</sup>

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### Abstract

**Purpose:** Although the notion of articulating and communicating ideas is central to theories of business models, the current literature has scarcely explored how business models are used and communicated by practitioners. The label “business model” itself can both organize and construct beliefs and actions. The purpose of this paper is to explore the roles of practitioner-described business models by using an interpretive approach.

**Design/Methodology/Approach:** The study is based on the case study of a Swedish technology start-up with a business model labelled “hardware plus software”. The firm’s conceptualizations of this business model in public and non-public sources were analysed in order to show how a practitioner-described business model was used.

**Findings and Contributions:** The business model label can be used at different organizational levels using different levels of abstraction, and may include multiple—and sometimes conflicting—perspectives. The paper shows how a practitioner-defined business model label served as a communication device by supporting three roles: communicating strategy, learning from others, and articulating identity.

**Originality/Value:** The study introduces the notion of the business model as a communication device by showing how the label itself both enables and constrains interpretations of the firm in practice. The finding of parallel representations contradicts the implicit assumption that firms refer to a “single business model” by showing the diversity of articulations of the business model depending on the time frame, the role of the communicator, and communication arenas.

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Keywords: communication, business model, archetypal label, case study, new venture

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## Introduction

The idea of business models dates back to medieval forms of organizing as well as earlier strategy literature (Chesbrough and Rosenbloom, 2002; Baden-Fuller and Morgan, 2010; Demil and Lecocq, 2010), but recently the number of studies on business models has been growing rapidly since the business model label began to gain popularity with the rise of e-commerce in the late 1990s (Demil and Lecocq, 2010; Olve *et al.*, 2013; Wirtz *et al.*, 2016). The notion that all firms have a business model, whether they are aware of it or not, is continuously emphasized by researchers (e.g. Casadesus-Masanell and Ricart, 2010; Fiel, 2013; DaSilva and Trkman, 2014; Malmström and Johansson, 2017). In addition, the business model concept has evolved in parallel as a label used by practitioners as well as researchers (Chesbrough and Rosenbloom, 2002; Jensen, 2013; Petri, 2014). This highlights the business model label's potential to communicate about value creation in both academic and practical settings.

Although the idea of the business model as a communication device is not a well-used description at present (but see Doganova and Eyquem-Renault, 2009; Aversa *et al.*, 2015; Täuscher and Abdelkafi, 2017; Havemo, 2018), the assumption of the business model's communicative power is implicit in many studies. For example, the business model has been proposed to be a story of how the enterprise works (Magretta, 2002), a description of how it creates value (Tece, 2010), and its way of doing business (Zott, Amit and Massa, 2011). While Magretta (2002) highlights the power of a "good story" or a shared idea about what makes the business successful, Tece (2010) argues that the business model can "articulate" the logic of value creation. Relatedly, some researchers highlight the ability to articulate causality as a main benefit of business models (Casadesus-Masanell and Ricart, 2010; Baden-Fuller and Mangematin, 2013). In line with this, Massa Tucci and Afuah (2017) note that business models fill a growing need for an explanatory concept in light of new revenue models in the digital economy (Massa, Tucci and Afuah, 2017). Both views—the business model as a story and the business model as a means to articulate value creation logics—implicitly assume that communication is a central aspect of business models.

As a label that carries meaning about how firms work, the meaning of the term "business model" can be

enacted to create outcomes for firms. Here I argue that it is the concept as such that carries specific associations, and can be meaningful from a communication perspective as a label for a set of ideas about value creation. The power of labels was emphasized by Ruth Hines (1988), who stated that accountants' power comes not from describing reality in accounting terms, but in creating accounting concepts in the first place and making them real to society as a whole. Her paper, titled *In communicating reality, we construct reality*, conveys that conceptualizations and labels equally organize and shape our understanding, thus creating the reality of the firm. In line with the view that labels are closely linked with social constructions to organize meaning, this paper adopts an interpretive approach, aiming to "understand phenomena through the meanings that people assign to them" (Klein and Myers, 1999, p. 69). This is done by studying business models as a label and what roles the label plays as actors in the case-study firm communicate using the label in different communication arenas. This paper thus differs from some of the business model literature, which focuses on researcher-described business models.

In light of the above, there is an opportunity to enrich the business model literature with a practitioner-based perspective on how business models work, focusing especially on the role of business models as communication devices. Thus, *the purpose of this paper is to explore the roles of practitioner-described business models by using an interpretive approach*. This is done through a case study of a Swedish technology start-up, where the business model was a key component of how company actors described the company both internally and externally. The contribution of this paper is to lay the groundwork for a complementary perspective of business models as communication devices, which is implicit but not fully explored in the business model literature to date, and also to show the roles that a specific type of business model label, the archetype, plays once it is adapted from idea to practice.

The rest of the paper is organized as follows. In the literature review, I compare framework-based and practitioner-based descriptions of business models. Based on an overview of research of practitioner-based descriptions, I identify two research gaps related to the purpose of exploring practitioner-described business

models. These gaps are addressed in the paper. Next, I discuss the research methodology, including the case selection and how I captured a practitioner perspective on business models. The findings are presented in three sections, each of which contains a presentation of the empirical findings followed by an interpretive analysis in relation to the purpose of the paper. Finally, the findings are summarized and discussed in terms of research implications in the concluding discussion.

## Literature Review

A large share of the strategic management literature on business models has been framework dominated, i.e. aimed at developing frameworks or describing business models according to frameworks. This is evident in the large number of studies proposing components (e.g. Amit and Zott, 2001; Hedman and Kalling, 2003; Demil and Lecocq, 2010; Osterwalder and Pigneur, 2010; see also Wirtz *et al.*, 2016 for an overview), levels of analysis (e.g. Osterwalder, Pigneur and Tucci, 2005; Casadesus-Masanell and Ricart, 2010; Jensen, 2013; DaSilva and Trkman, 2014; Massa and Tucci, 2014), and themes (Zott, Amit and Massa, 2011; see also Felt, 2013 for an overview) through which to analyse the business model. More recently, Massa, Tucci and Afuah (2017) proposed to divide previous research into categories depending on the treatment of the business model concept. They identified three different interpretations of the business model: as attributes of real firms, as cognitive or linguistic schemas, and as formal conceptual representations of how firms work. The cognitive schema view is interesting in light of the business model as a communication device, since it highlights both the storytelling and sensemaking aspects of business models. As Massa *et al.* point out:

“Narratives of the business model can be constructed by managers and entrepreneurs and used not only to simplify cognition, but also as a communication device that could allow achieving various goals, such as persuading external audiences, creating a sense of legitimacy around the venture (e.g., by drawing analogies between a venture’s business model and the business model of a successful firm: “We want to be the Uber of...”) or guiding social action (e.g., by focusing attention on what to consider in decision-making and instructing on how to operate).” (Massa, Tucci and Afuah, 2017, p. 84)

Several of the empirical studies identified as “cognitive schema” interpretations by Massa *et al.* (2017) use frameworks and conceptualizations developed by the researchers to describe business models, rather than business model labels used by the studied firms, which is a key aspect of the practical use of business models. This includes Martins, Rindova and Greenbaum (2015), who used a framework-based definition of what the “business model schema” should contain, such as “design of activities and exchanges that reflect critical interdependencies and value-creation relations” (p. 105), and also Aspara *et al.* (2013), who explored how the beliefs about the business of Finnish firm Nokia’s top management played a role in the decisions taken to transform the business model. Although the study followed conceptualizations of the managers’ cognitive schemas and how these influenced strategic transformations, the business model label seems to have been added ex-post by the researchers to explain change, rather than being the guiding terminology for the managers.

While these examples show the tendency to treat the business model as an analytical framing, there are few examples of a business model acting as a “good story” in practice. One such study is Doganova and Eyquem-Renault (2009), who investigated how the business model of a French new venture served as a “market device” as it was adapted to different formats and scopes when communicating with different stakeholders. However, despite differences, the study indicates that, at the core, the basic cognitive schema remained the same. This implies that business model descriptions used across different communication arenas follow a common underlying logic. In another study, George and Bock (2011) analysed themes of business model definitions using two text samples, the business model literature and managers’ definitions. More than 20 different themes were found through discourse analysis of the material, including the business model as exploitation of value, a plan or map, a structure, activities, design, and products and services. This implies a variety of interpretations of what the business model is among practitioners. The views were, however, derived from generic definitions of the term “business model” rather than descriptions of the managers’ own firms, which leaves the question of what role the practitioner-described cognitive schema plays in firms.

In their empirical investigation of how one type of external stakeholder (financial analysts) interpreted the business model of a Danish pharmaceutical company, Nielsen and Bukh (2011) found that the analysts had trouble explicating what a business model was, both as a general concept and for the case company. The researchers found that more specific descriptions including internal configurations and relationships were found more useful than industry level definitions, but also that the concept “business model” could be a hurdle in terms of getting the interviewees to talk about the value creation processes of the case company. While these findings were limited to a complex business model and a single case, they suggest that explaining a business model to organizational outsiders can be difficult, and that understanding is linked to different degrees of abstraction.

Financial disclosure is another field where the business model artefact has gained research attention in recent years. In this context, the analysed material is firms’ business model disclosures in annual reports (e.g. Beattie and Smith, 2013; Giunta, Bambagiotti-Alberti and Verrucchi, 2013; Haslam *et al.*, 2015; Bini, Dainelli and Giunta, 2016; Michalak *et al.*, 2017; Havemo, 2018). This literature highlights another dimension of the business model as a communication device, namely that it can serve as a way for firms, regulators, and society to describe the firm in quantifiable terms to its stakeholders. However, as Michalak *et al.* (2017) noted in their overview of voluntary disclosure behaviour of business models, there are few studies of business model disclosure in the intellectual capital reporting field to date.

Among the extant studies, it has been suggested that the business model could increase the information quality of reports by providing a holistic framework (Bukh, 2003; ICAEW, 2010; Beattie and Smith, 2013; Nielsen and Roslender, 2015), though as Michalak *et al.* (2017) show, the definition of “business model” differs across frameworks like the strategic report and integrated reporting guidelines, making comparisons difficult. A recent study that examined business model reporting was conducted by Bini *et al.* (2016). By performing content analysis on business model disclosure in UK annual reports, they found that the most commonly reported business model component was value creation, but that explanations of interdependencies in

line with the “holistic framework” idea were rare. This is supported in Havemo (2018), which shows that for firms using visualizations of their business models in annual reports, it was common to depict the business model with few visual indicators of change (value creation logics). At the same time, Bini *et al.* (2016) indicated that a range of business model descriptions were used in UK firms’ disclosures, from very limited to more expansive accounts, which suggests that firms use the business model as a communication device in different ways in their external communication.

In their study of business model disclosures, Giunta *et al.* (2013) observed what they call fashion effects in Italian annual reports, suggesting that some firms report business models mostly because it is fashionable, i.e. an attempt at impression management. In a similar vein, Melloni *et al.* (2016) sought to determine whether business model disclosure is informative by checking for thematic manipulation. With their sample of 51 companies that have adopted the Integrated Reporting (IR) framework, Melloni *et al.* (2016) concluded that business model disclosure usually adopted a positive tone, which the authors argue is an indication of impression management.

In sum, previous research has shown that firms report on the business model to different extents and for different purposes (Bini, Dainelli and Giunta, 2016; Melloni, Stacchezzini and Lai, 2016), and that there is a large span of interpretations of what business models mean to practitioners (George and Bock, 2011; Täuscher and Abdelkafi, 2017; Havemo, 2018). This suggests that the business model serves a purpose as a communicative device for firms. However, the literature on business models is largely framed in analytical rather than empirical terms, using a framework approach where the label “business model” is often used ex-ante to analyse an empirical material. With the exception of Doganova & Eyquem-Renault (2009), who propose that the business model can serve as a “market device” for new ventures when engaging with investors, there are few studies indicating the practical uses of a business model as a communication device. Taken together, these aspects leave a gap in the knowledge of how firms use the business model label in practice, which is the question that this study addresses through the purpose of exploring practitioner-described business models.

## Research Method

To investigate practitioner-described business models, a single-case research design was chosen to allow for a comparison of the business model descriptions across communication arenas. It could therefore be described as empirically driven and exploratory. The case, a Swedish new venture (“Tech Startup”), was chosen because the business model was a prominent element in the way the firm defined itself. As a fast-growing tech start-up in Swedish industry, Tech Startup needed to be able to explain its value proposition to investors, similar to the venture in the study by Doganova and Eyquem-Renault (2009), and this is where the business model played a part. In addition, by studying a small company with a limited scope of operations, it was expected that “business model” would refer to a single idea, enabling comparisons between communication arenas.

Tech Startup produced, marketed and sold a consumer electronics product in the “wearables” segment, similar to products such as the Fitbit activity tracker and the GoPro action camera. At its peak, Tech Startup had around 50 employees in three Swedish offices and one US office, and had attracted media attention in Sweden and abroad as a start-up to watch. With hopes of rapid growth, the firm had taken on venture capital from

multiple investors in several rounds. The time period covered in the interviews and other material (2014-2016) corresponds to the height of the firm’s success in the sense of having generated substantial venture capital to scale operations, and being in the process of launching a new version of its offering. Given the new product launch, the interviews were characterized by a positive, if uncertain, outlook on the future. However, as of 2017, the company was no longer in business following the unsuccessful launch of the new product and the inability to sustain sufficient revenues, resulting in bankruptcy. One limitation of the paper is that, since the purpose is to explore practical articulations of the business model, there is no data available to speculate about any potential relationship between the business model and the bankruptcy of the firm. I will therefore not return to this aspect in the empirical section.

To capture descriptions used across communication arenas, data was gathered from both public and non-public sources, including interviews, the annual report and a crowdfunding pitch. Since the study’s aim is to explore the roles of practitioner-described business models, the focus on both internal and external uses of the business model allows issues to emerge based on the data collected from the case company. An overview of the sources for this study is presented in Table 1.

Source	Public (y/n)	Description	Time frame	Business model mentions
Interviews	n	2 semi-structured interviews with CFO, approx. 2 hours	March/April 2015	High
	n	1 semi-structured interview with HR manager (HRM), approx. 1 hour	June 2015	Moderate
Company presentation	n	Company presentation and Q&A session by CFO to audience of junior and senior researchers, 1 hour	March 2015	Some
Crowdfunding pitch at Kickstarter	y	The company’s crowdfunding pitch, where the product idea was described and customers could contribute funding	2012	None
Conference appearances	Y	Video from tech conference, interview/panel with CEO	2013	Some
Annual reports	y	Publicly available annual reports	2013-2015	Some
Online communication	y	Tech Startup’s website, including the company’s blog, which contained news	2014-2016	None (except press release)

**Table 1: List of Sources**

In the table, I also indicate the extent to which the business model was mentioned in the sources. Understandably, the business model featured more clearly in the interviews, which were designed to discuss the business model, while the public sources ranged from no mentions to some mentions of the business model.

For the internal perspective, three interviews were conducted with two managers at the case company. Two semi-structured interviews were conducted with the CFO. The main interview used open-ended questions designed to allow the subject to discuss topics such as the business model, the value chain, and key stakeholders. The second interview was a follow-up interview to address topics not covered by the first interview, mainly regarding the firm's partnering strategy and considerations regarding business model scalability. The interview with the HR manager addressed the topic of the business model, but also covered questions regarding HR-related aspects in general, and collaborations within and outside the company. The HR manager was new to the company whereas the CFO had been with the company for a longer period. Questions about the business model were open-ended in the sense that the term "business model" (in Swedish) was used by both the interviewer and interviewees, but without an agreement about the definition of the term. The CFO leaned more towards external descriptions and activities, whereas the HR manager focused on boundary-spanning collaborations and on the task of managing human resources and activities inside the company.

Once it became clear that the interviewees used other definitions than I did, the rest of the interview discussions were interpreted based on this view rather than any theoretical definition that might otherwise be used. For example, the idea of seeing activities (which feature e.g. in the business model canvas by Osterwalder and Pigneur (2010)) as part of the firm's business model was rejected by the CFO, who argued that the business model was "hardware plus software". In addition, it was also clear in the material that the organizational members used the business model label differently depending on the context and the source of communication. Both these aspects seem to be largely unexplored in the business model literature, and therefore came to serve as a point of departure for practitioner-based

perspectives on business models. The method used to capture accounts of the business model was to use an interpretive approach. The usual limitations of interpretive analyses therefore apply: the interpreter cannot know for certain that every utterance has been interpreted as it was meant, nor that the communicators' intentions have been captured in their entirety. However, to guide the analysis, I have taken care to be transparent about how the paper topic was developed in this chapter, and to include the interpreted texts (e.g. interview quotations, annual report content) as part of the empirical findings in the next chapter.

After the interviews, which were recorded with the interviewees' permission, the sessions were transcribed (in Swedish, the interview language). The collected business model descriptions were gathered in a single file to provide an overview of the material (Miles, Huberman and Saldaña, 2014). After this, the descriptions were organized in units based on instances where either the "business model" or the firm's own chosen archetypal label "hardware plus software" was mentioned. Instances from different sources were used to inform about either internal or external communication about the business model, but were treated as non-convergence evidence (Yin, 2014) for the most part, since their use in the study was to address descriptions of the business model in different communication arenas, rather than confirming validity across data sources.

For the external communication dimension, I collected publicly available data published by the company. The data exemplified how the firm presented itself in external channels such as on the website, in annual reports, at conferences, and in the crowdfunding project description that was originally used to finance the launch of the company's product, most of which did not make explicit mentions of the business model. The public sources were intended to capture different communication arenas. For example, the annual report is a legally mandated document where claims made should account for the firm's past activities and future strategies (Stanton and Stanton, 2002), while the company's online communication on its website and blog might contain more customer-oriented information designed to present the company and its products in a favourable light. The sources were checked for mentions of the business model label (that is,

texts that included the term “business model” or the words adopted as the business model label by the firm, “hardware and software”). Although it can be seen as a limitation that the sample is relatively small, the collected material covers much of the public communication made by the company using its own channels (blog, website, annual report) during the studied time period, which allows for comprehensive coverage of external communication arenas.

Because the archetypal label “hardware and software” was so prominently used by the CFO and CEO, the analysis of the public and non-public material was inspired by Massa and Tucci’s (2014) classification of business model perspectives according to the degree of abstraction from reality. In their classification, narratives are the highest level of abstraction of business models, and these, along with the second highest level, archetypes, are more conceptual and therefore difficult to measure and compare since they contain little detailed information (archetype) or an abundance of company-specific un-coded information (narrative). In the business model literature, archetypes are generic labels that describe key elements of the business model (e.g. Linder and Cantrell, 2000; Johnson, 2010), and are one way that practitioners’ business models are often identified in business discourse (Purkayastha and Sharma, 2016). Popular examples include the Southwest Airlines business model (Morris, Schindehutte and Allen, 2005; Teece, 2010; Fielt, 2013) and various firms’ interpretation of it (Casadesus-Masanell and Ricart, 2010; Aversa *et al.*, 2015), as well as the razor-and-blades (Chesbrough and Rosenbloom, 2002; Osterwalder and Pigneur, 2010; Teece, 2010) and freemium business models.

Based on the “archetypal” way of defining business models as outlined above, it was clear that the case firm used mainly one level of abstraction for its business model, the archetype. This is why, in this study, the concept of business model label was operationalized using the case firm’s archetype-based label and thus drawing on the archetype perspective to understand the use of the business model term in practice. As a result, the analysis aimed to link the case firm’s archetypal label with (1) how the business model was described by the case company and in which communication arenas, and (2) what role the archetypal label played in the firm’s various descriptions of the business model.

## Business Model Descriptions at Tech Startup

This section provides an overview of the findings of the study in accordance with the purpose of exploring the roles of practitioner-described business models. The empirical case is outlined in the section “descriptions of the business model”, in which business model descriptions are introduced and discussed; this corresponds to the principle of abstraction from empirical data to the level of general concepts and theories in interpretive research (Klein and Myers, 1999).

A small Swedish start-up in the technology sector, Tech Startup designed, produced and marketed a tech product in the wearables segment. In addition to the physical hardware, the product also included software (data analysis algorithms) and a storage service for customers to store the data generated by the hardware and software. The integration of hardware and software was seen as integral to the company’s competitive advantage: “It’s the system as a whole (...) that’ll give us a competitive advantage.” (CFO, interview 2015). Both elements were crucial for its value proposition, and the company strove to develop both aspects, leading the firm to describe its business model as “hardware and software”. For example, when asked to specify whether the company was a hardware company or a software company at a conference in 2013, the CEO maintained that “We are a hardware plus software company.” The CFO adopted the same approach to describing the business model in 2015: “The business model is hardware + software, [...] a combination of upfront selling and after-market selling.”

Although at first glance this business model related to the product, the hardware/software also represented an overarching strategy for how the business was supposed to generate revenue, as explained by the CFO:

“[W]e could run them as separate companies. (...) We should think like that in the business model as much as possible, that we don’t subsidize one with the other. (...) In this type of company, you need to be able to shift focus, in case it turns out we’re not making any money here, we need to shift to this and that.” (CFO, interview 2015)

The idea of the “hardware/software” divide was closely linked to the revenue model and the profitability of the company. The CFO also commented on the link between customer value, profit and the business model, explaining that customer value was a key aspect when making decisions about future strategic directions for the business model:

“If you ask the sales manager, he’ll say: ‘It’s problematic to sell a product that the customer feels he or she buys completely.’ It’s like with a mobile phone... the phone costs money, but for it to be valuable, you have to buy additional [services] all the time... You should find a way to charge for what the customer perceives as valuable, and not charge for the rest. So if it turns out that it’s the software that’s valuable, then you might want to lease the hardware to the customer, and have them pay a monthly fee that’s three times as high... and have them return the hardware when they’re done... That’s why we want to keep them separate, to be able to change our focus.” (CFO, interview 2015)

In addition to showing that the role of the business model was closely intertwined with the CFO’s reasoning about the future directions of the firm, the quotation demonstrates another role for the archetype. By using a recognizable label that held both generic shared meaning and local meaning within the firm, the CFO could draw on the generic archetypal label to link the firm’s business model to similar models in other industries, in this case mobile phones. Based on this, the generic logics could be adapted to the firm’s local setting by using these terms to discuss revenue and customer value based on the company’s own products.

As indicated in the above quotation, the interviews suggested that the business model archetype was used by Tech Startup to discuss changes now and in the future. In 2015, Tech Startup was in the process of iterating possible approaches to find a viable balance between its hardware and software offerings. The ability to shift from one to the other, depending on which was more profitable, was viewed as a foundation for future strategic change by both the CFO and the HR manager. For example, the HR manager stated that the business model’s focus was “... both hardware and software... but in case we don’t become profitable, we might have to change our focus somehow.” (HR manager, interview

2015). In line with this, the HR manager stressed the developing nature of the business model, explaining that:

“I would say that our business model... if you look at what we actually do, it’s to create an innovative product that is revolutionary in the market... And the business model that we are building around that, it’s about trying to—first and foremost maybe not about being profitable, but to have alternative financing—but in the long term to become profitable... So I think our business model is very challenging, because right now we don’t even know what’s going to happen with the second generation [of the product].” (HR manager, interview 2015)

The above quotations from the CFO and the HR Manager show that the business model was seen as developing, and that the developments were framed in terms of the cognitive schema afforded by the archetypal label “hardware and software”. Some discussions of the business model were centred around future directions: it was about becoming profitable, and about viewing the two elements (product features) as two sides of the product offering, although that balance was not absolute but rather reconsidered on a continuous basis. Put differently, the archetypal label served as a lens to focus discussions and to pick out key strategic points of interest in relation to the offering, customer value and profitability concerns.

The annual report description was one of the few occasions where a link was made between activities (what the company does) and what products or offerings each activity related to. For example, the 2014/15 annual report stressed that the software and the hardware were being developed separately. This created a conceptual link between the business model label at the archetypal level and the setup of activities linked to each part (development and sales). The annual report also stated that the business model was to sell the offerings separately from each other, highlighting separation as a key element of the business model, emphasized in writing by using the word “separate” twice:

“The [hardware] and the software are developed separately and the company’s business model is to sell them separately.” (Annual report, 2014/15)

In the annual report of the following year, the term “business model” was no longer included in the narrative section of the annual report, although the essence of the message remained the same: “The company develops and sells hardware and software” (Annual report, 2015/16), which may suggest that the label “business model” was no longer thought to be necessary to frame the descriptions of the company, and also that the archetype label had come to be seen as equivalent to a business model within the firm. In contrast to the explicit use of the term “business model” externally, internally the idea that the company should be “separated into two parts” was not part of the informants’ conceptualizations of operations. On the contrary, the prevailing idea in terms of activities was that that Tech Startup should be perceived as one company from the customer’s perspective. For example, the CFO stated that:

“The business model should only be kept separate in the sense of a business model. We’re supposed to look like one company. It’s the same thing with the American subsidiary, for instance. We want to look like one company. Completely.” (CFO, interview 2015)

In the CFO’s view, it was important that customers perceive the company as one, rather than as two separate entities delivering the physical product and the software product separately. One way to achieve this perception was to ensure that the support function was fully integrated, and that employees understood the whole value chain from the customer’s perspective. The CFO put it the following way:

“The support function is the same throughout the two value chains [of hardware and software]. It’s the same support. We want the customer to perceive it the same way. It’s separate in the business model so that we can shift focus, but from the customers’ perspective, we want it to work the same way, that they should be able to ask the same person.” (CFO, interview 2015)

This shows that the CFO was careful to separate the idea of the business model (the strategic description or the idea of the company), and the actual activities taking place such as the support function or the development functions. The strategic label acted at a different level

of abstraction than the operational side of the business, and the CFO argued that these aspects were, in fact, not the same thing, and as a result, it was possible to reason with opposing descriptions (the hardware and software as separate or integrated) of the business model depending on the context it was applied to. Thus, at the activity level (the lowest level of abstraction in Massa and Tucci’s (2014) framework), the business model was secondary to the practicalities of running the company, as well as the perceived source of customer value. The goal to be perceived as one company regardless of the overall business model logic, and legal structures in different markets, was also reflected in the internal organization of the company. As shown above, this was reflected in customer support operations, but the approach is also present in the developer team, although the competences and skills of the developers might get in the way of complete integration between the two, as pointed out by the CFO:

“... it’s not two separate companies. The developers do a little bit of this and a little bit of that. Though of course, if you do circuit board design one day you won’t work with front-end design the next day. [The developers] have their specialized skill sets.” (CFO, interview 2015)

One implication of the above descriptions is that there were differences between internal and external communication arenas in the sense that external descriptions treated hardware and software products as separate and complementary, while internal descriptions instead stressed the integration of the two. This idea is in line with the view that business models can exist on many levels of—different but still cohesive—abstractions (Jensen, 2013). In the case of Tech Startup, however, it was not only the representation that differed, but also how the business model was constructed in different communicative arenas. For example, the HR manager raised the issue of unity by stating that: “we are fairly ‘undefined’ regarding our vision and mission and so on.” (HR manager, interview 2015). This quotation highlights that the HR manager saw the business model as a strategic tool, linking it to other strategy concepts such as vision and mission, but also that there was a lack of agreement about the meaning of the business model internally.

Externally, the company communicated about the business model in some communication arenas, such as the annual report, but not in customer-oriented contexts. For example, the blog entries on the website primarily focused on the value proposition to customers, giving numerous examples of customers enjoying the product. In a similar vein, the crowdfunding pitch that was used to support the launch of the product did not mention the term “business model” or the “hardware and software” label, instead focusing on the product development process, collaborations established to develop the product, and, most prominently, the product specifications and value proposition to the customers. Interestingly, these are aspects often interpreted as elements of the business model in business model studies (e.g. Osterwalder and Pigneur, 2010; Zott and Amit, 2010), but the terms were not linked to the business model concept at Tech Startup. The business model was, however, mentioned in the annual report, and was brought up at a technology conference panel attended by the CEO in 2013, where several follow-up questions addressing the nature of the business model were posed by the audience.

At the internal level, this section of the paper has shown that the CFO treated the business model as a framework to describe the company’s operations in terms of its two main products (hardware and software). Conversely, the HR manager focused more on the internal perspective and also noted a lack of unity in views on the business model among the managers. However, although the CFO did describe the customer experience in terms of the business model archetype, this was done by downplaying the separation of hardware and software. Similarly, descriptions relating to internal operations did not incorporate the idea of the archetype hardware/software, nor was the business model explicitly mentioned in other ways. Rather, descriptions of the company’s internal operations focused on the activity level, which indicates that the firm adhered to the archetype only when addressing audiences which were familiar with term business model, and expected the term to be used. Although the business model archetype was used to communicate with both internal (e.g. other managers, employees) and external audiences (e.g. investors, industry experts and readers of the annual report), the label as such was not necessarily adopted at all levels.

## Roles of the Archetype in the New Venture

In this section, I analyse the data presented in the previous section in terms of which roles the business model played at Tech Startup.

At Tech Startup, the archetypal label “hardware and software” served as the main way to conceptualize the business model. Despite not serving as a cognitive schema on all internal levels, nor acting as a key communication device in external communication arenas, the material in the previous section highlights that the business model, expressed as an archetypal label, played a number of roles as a communication device, and more broadly, as a cognitive schema. Based on the discussion in the previous section, I have identified three roles of the archetype, summarized in Table 2 below, and discussed in the following subsections.

### Communicating strategy

The first, and perhaps most prominent role in the interviews and external data, was the role of the archetype when communicating the strategy. This was done by adopting the label “hardware and software” when describing the firm to external audiences, thus helping Tech Startup to derive legitimacy from the use of established terminology and meaning. The archetype

Role	Description
Communicating strategy	The archetype provided the terminology for communicating the strategy externally, e.g. to investors and industry professionals. The label became the foundation for theorizing about customer value internally, helping to frame value creation mechanisms.
Learning from others	The archetype helped in identifying similar models in other industries to learn from, in the sense of the archetype acting as a “recipe” to mimic.
Articulating identity	In the logic of “becoming” successful as a new venture, the label helped to articulate a future identity, serving as “scaffolding” for reflecting on differences and thus articulating on perceptions of the firm’s identity.

**Table 2: Roles of the Business Model Archetype in the New Venture**

provided the terminology for describing the underlying logic of the business for the hardware and software model, which both acted to enable ways of thinking, and constrained possible strategies based on the current structure. At the internal level, the label also helped to elucidate sources of customer value. Interestingly, depending on which communication arena the label was used to communicate in, different aspects of the business model were highlighted in relation to the archetypal label. Externally, communication focused on the revenue model and offering, i.e. how to generate value with the two products, hardware and software. For instance, the revenue dimension was present in the CEO's description of the company to the external audiences of experts from the tech industry. When discussing the business model from an internal perspective, however, the production logic of the integration of hardware and software was stressed as opposed to the externally conveyed idea of separation.

### **Learning from others**

Second, Tech Startup used the archetypal label to draw inspiration and make comparisons with companies operating similar business models in other industries. This corresponds to the perspective that a business model label transcends firm contexts and that the basic elements of a business model can be generalized, and thus compared, across industries (Baden-Fuller and Morgan, 2010). This study shows how the business model can be used in this manner as a way to both legitimize the local adaptation of the business model idea and draw inspiration from other industries using the same label. The case also adds to business model theory by showing that archetypal labels can be translated from the generic to the specific in a company setting, and that this allows the generic label to play several roles in practice rather than simply as a label, which is one of the criticisms directed against business model conceptualizations at the generic levels of narratives and archetypes (Massa and Tucci, 2014). This corresponds with research that explores the multifaceted and complex processes of translation as business models are adopted and adapted in a sustainability context (Ahlgren Ode and Wadin, 2019).

### **Articulating identity**

The third role played by the archetypal label was as "scaffolding" for articulating the firm's current and future

identity. The interviews suggest that the label was not merely a generic word used in external communication, but that it had also become a language for describing the firm, i.e. a way to articulate the identity of the firm. The scaffolding function worked both by constraining the number of possible business model interpretations, and as an enabler of different future interpretations based on a single logic. An example of potentially constraining scaffolding was how the CFO, having supported the idea of the business model as the archetype "hardware/software", instantly dismissed other perspectives on business models in the interviews, such as it being a set of activities, a system, or a network, which are common perspectives on business models among researchers (see e.g. Amit and Zott, 2001; Hedman and Kalling, 2003; Zott and Amit, 2010; Wirtz *et al.*, 2016). This is similar to the way Nokia's top management acted when forced to consider alternative strategic directions in the study by Aspara *et al.* (2013). For Nokia's management, the difficulty was not in detecting new opportunities, but rather in reaching consensus about how to pursue them. In contrast, Tech Startup's (mainly) external focus on the hardware/software archetype seems to have served as a cognitive constraint in the sense of it becoming a dominant logic (Prahalad and Bettis, 1986) for thinking about the business model in the first place.

In addition to the limiting role outlined above, the archetypal label could also be seen as an enabler, for example to link the present situation to planned future strategic decisions. The idea of "having two legs to stand on" and the dynamic role of the two products in the process of "becoming profitable" recurred throughout the interviews and became the basis upon which to present a future state. Vendelø (1998) studied a software firm's attempts to establish legitimacy as a new venture, finding that reputation narratives (a kind of identity articulation) were future oriented because there was little in the way of present performance that could serve as evidence of performance. Similarly, this study highlights that the archetypal label played a role in providing a legitimating foundation for describing an intended future state since the interviewees' descriptions focused on the future viability of the business model—whether the firm would "become" profitable. For instance, profitability was described as a matter of current and future concern for the interviewees, and one of the determinants of the current strategy

was the perceived ability to change the focus between hardware and software in the future. The perspective of “becoming” is in line with the view of entrepreneurship advocate Steve Blank, who argues that a key difference between new and established ventures is that “while existing companies execute a business model, start-ups look for one” (Blank, 2013, p. 67). The quest described by the informants, of *becoming* a viable firm, largely corresponds with Blank’s description of start-ups looking for a business model. However, in Tech Startup, this search was framed in terms of a generic label, with the “becoming” aspect revolving around operationalizing this label in practice. In line with this, it has been recognized that the business model can play a key role for new ventures by providing a “framework that assists the entrepreneur in assessing consistencies and recognizing trade-offs among decisions” (Malmström and Johansson, 2017, p. 2).

Tech Startup’s choice to keep the hardware and software elements separate on a strategic level can be explained as a design strategy to remain flexible in case the company learned that one side of the business was more profitable than the other. In fact, a solidification of the business model seemed difficult precisely because the company was in the process of growing a customer base and developing a new generation of products. In other words, the case describes the difficulty in conceptualizing the business model concretely and consistently in the start-up phase, which may be related to the company’s ongoing quest to find a viable business model. One implication of this is that, for new ventures, descriptions of the company or its business model could be descriptions of the intended future state on which to build reputation, rather than an intended representation of the present, but with the downside of different conceptualizations depending on the purpose and audience. For researchers looking to understand business models that are undergoing pressures of change, it is important to consider different levels of abstraction and the dynamism of the business model during the ongoing process of searching for a viable configuration.

## Conclusion

This study offers an example of how business models have been conceptualized in a practitioner case. The purpose of this paper is to explore the roles of a

practitioner-described business model by focusing on its role as a business model archetypal label in practice. The literature review indicated that the business model field has yet to show what the business model does in practice when used as a communication device (Massa, Tucci and Afuah, 2017) by firms. In response to this gap, the study shows that the adopted business model archetype can play both an enabling and a constraining role in firms’ communication about their business model. The business model label, although not conforming to academics’ notion of what a business model should contain, nevertheless helped the case firm to identify similar business models in other contexts to learn from, which is in line with Baden-Fuller and Morgan’s (2010) idea of the business model as a recipe to replicate and to learn from. Finally, the business model helped to articulate the current and future strategy of the new venture.

This study expands the theoretical knowledge of business models by showing how archetypal business model labels can be interpreted and enacted in practice, and how the business model concept can be understood as a communication device that contributes to constructing the idea of the firm, e.g. as part of articulating the firm’s identity. Through the case explored in this paper, I have exemplified how business models help to construct reality through labels as discussed by Hines (1988). As opposed to previous studies, which have described archetypal labels as parsimonious at the expense of practical usefulness (Massa and Tucci, 2014), this study shows that the translation of generic ideas from an archetype to a company setting is possible once the label is integrated as a communication device that guides communication, learning and identity articulation. The findings could inspire new practice-based research and business model teaching, taking practitioners’ business model conceptualisations and business model label use as a point of departure.

Considering the current popularity of practice-oriented research, a key contribution of this study is to exemplify the number of roles that business models can play when used as a communication device in firms, and that there may be different interpretations of the business model within a single firm. It is important to try to capture the hitherto neglected diversity of the term on the practitioner side both across and within firms, especially with the growing academic interest

in business models, and the trend that regulatory bodies encourage reporting on business models (e.g. FRC, 2014), but often in divergent ways (Michalak *et al.*, 2017). For instance, this study shows that there seems to be a difference in how the business model is described depending on the informant's role in the firm—the HR manager's perspective was more internally focused, while the CFO, whose job involved pitching the idea to investors, tended to adopt an archetypal label as a means to describe the business model.

Finally, this study also challenges the often present, but rarely explicated, assumption that a firm has a single, clearly stated, and effectively shared, business model. The “one firm, one business model” motto is often an implicit assumption; in the financial reporting literature, for example, it is suggested that the firm's business model could serve as a holistic framework in reporting, indicating that there is only one business model. Similarly, in the business model literature, studies often imply the existence of a single model, e.g. Zott and Amit (2007), who coded firms according to two business model design parameters, efficiency and novelty. In contrast to this finding, this study instead implies that there can be more complexity in business models than the “one firm, one business model” assumption implies. Multiple ideas, complementary and contradictive, may exist at once. This is something which might change how we investigate business models in firms: rather than discussing *the* business model of the firm, research will need to consider which *multiple business logics* are at play, and how these are inter-related—for example, are they nested logically from a shared overarching business logic but at different levels of abstraction, are they related but not directly connected (e.g. focusing on different product categories, or markets), or, as this study shows, do they cover multiple, sometimes contradictory, meanings? The interpretation and description of business models in firms would differ depending on each, and an awareness of the logic at play when investigating firms that claim to have business models is needed.

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**Emelie Havemo** is currently a PhD candidate at the Department of Management and Engineering, Linköping University. She is interested in the ongoing trend to use visual communication in society as well as in organisations. This trend is explored by studying the role of representations in the world of business, for example the role that business models play when constructing the idea of the organisation to various stakeholder groups. Emelie's previous research has added novel insights on the visual side of business models by exploring the use of business model diagrams in annual reports and the historical roots of visuals in financial reporting.



# Performative Research in the Business Model Field: Exploring the Underpinnings of Studying Business Models in Action

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## Abstract

The adoption of a performative approach promises to enrich research enquiries pursued in the business model field. Such an approach has demonstrated its purchase in other business and management disciplines, including accounting, and has contributed to the wider exploration of social science methodology by their respective research communities.

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## Introduction

The special issue of papers from last year's conference published in the *Journal of Business Models* also included a contribution in which a number of researchers associated with the Business Design Centre at Aalborg University identified and briefly discussed a potentially rich research program for the business model field (Nielsen, *et al.*, 2018). They identified the program as enacting "a performative research agenda", which they argued constituted the fourth stage of business model research. The three previous stages are identified as being concerned with definitions and

concepts; business model innovation; and identifying frameworks and theories for describing and analysing business models respectively. The authors are at pains to affirm that none of the four phases should be regarded as more important than the others, and that their continued co-existence indicates a field that is rapidly maturing. The authors are enthused by this additional phase of research activity and in the final section of the paper briefly identify several constituents of the prospective research program, the pursuit of which promises to contribute to the further development of the broader business model field.

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Keywords: Performative research approach; 'accounting in action'; social science methodology.

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The purpose of the present paper is to explore in further detail the underpinnings of the performative research approach in an attempt to increase its accessibility for business model researchers and thereby enhance the insightfulness of the business model field.

## Approach

The initial task entails setting out what a performative approach to research entails and how it is related to the various approaches with which business model researchers are more familiar. In doing so, the paper draws on how performative and kindred approaches have enriched research in the accounting discipline over the past two generations. Having established the intellectual status and substance of performative research, attention switches to some of the ways of seeing that are associated with it, and how they are related to but differ from each other in matters of detail. The paper concludes by identifying a number of challenges that engaging with performative research presents.

## Key Insights

The term performative is widely understood to form one part of the performative-ostensive couple. Perhaps the simplest way to understand this couple is in the context of definitions. An ostensive definition is one that you would find in a dictionary, with the implication that what is on offer is an instructive guide to the meaning of a particular term. Different dictionaries commonly offer different definitions, although in the great majority of cases these tend to only differ in detail. For the most part the definitions of a business model that we find advanced in the existing literature are of a similar genre, although the extent of difference can be significant. Nevertheless the definition offered by an individual researcher would be how s/he wishes to portray a business model.

A performative definition is rather different, however. It is a characterisation informed by observing and interpreting practice, one that rejects the implied attribute of stability that underpins an ostensive definition. Whereas an ostensive definition conveys a sense of fixedness about what it refers to, *inter alia* a business model, a performative definition of the same is focused

on how what we understand as a business model is enacted or 'performed'. Implicit here is the attribute of process understood to signify that a business model is always evolving, i.e., is a much more open-ended entity than is implied in the case of an ostensive business model definition. What a business model is is determined by the act of business modelling. The idea of performative definitions is consistent with postmodern thinking, the genre of thought that has come increasingly to the fore since the middle 1960s and has had the consequence of challenging the taken-for-granted axioms of modernist thinking on which our knowledge and understanding have been based in modern times.

The performative approach to research is usually identified with the work of the French sociologist Bruno Latour, and is one component of his contribution to contemporary sociology that dates back to the late 1970s (Latour, 1986 ; Boedker, 2010). Performative research seeks to understand or make sense of aspects of social reality through studying the detail of that reality. In the case of performative research on business models the researcher engages with one or maybe a couple or possibly a small number of extant business models to learn how they are enacted. This incorporates exploring their perceived objectives as well as the outcomes of their performance. The generic objective of such a research program is to develop a stock of knowledge and understanding of business model (practice) that complements the more familiar stock of normative or prescriptive knowledge and understanding that both practitioners and researchers draw from. There is no explicit intention to evaluate specific business model practice via performative research, although this is not proscribed. What is eschewed, however, is the commonplace paradigm of predicting such practices as in conventional management scientific research.

Anyone with a familiarity with the performative research approach is likely to be aware that on occasion the alternative of a practice-based research approach is invoked. Such an approach is generally associated with a second French sociologist, the late Pierre Bourdieu (Bourdieu, 1977). The notion of 'strategy-as-practice' has become increasingly visible in the strategic management literature as academics and practitioners recognise the futility of seeking to identify *the* definition of strategy and instead focus their resources in exploring

the processes associated with practice, thereby amassing a body of knowledge and understanding of what strategy might encompass (Whittington, 2005). The parallel notion of 'business model as practice' should now make more sense.

Both of these approaches are well-known within contemporary accounting research, as well as in several other management disciplines, and are widely subscribed within the interdisciplinary and critical accounting research community. Within the latter tradition they can be seen as successors to one of its founding foci. In his editorial to the first issue of the journal *Accounting, Organizations and Society*, Anthony Hopwood indicated that the accounting research community had to date only devoted a small part of its attention to assembling a knowledge and understanding to the non-technical aspects of its practices (Hopwood, 1976). Hopwood proposed that it was now time to begin to explore accounting "in action", while committing the new journal to serve as a vehicle for publishing such research, something it continues to do to date. For the majority of accounting academics and practitioners of that time what constitutes accounting (practice) can be readily identified in the pages of textbooks and manuals. This knowledge and understanding is eminently prescriptive. This is how the practitioner is expected to proceed when enacting accounting, the right to do so being increasingly reserved for those who have passed the necessary tests of competence, i.e., become qualified.

Hopwood did not seek to belittle the efforts of the successive generations of accounting practitioners and academics who had assembled this extant stock of knowledge and understanding. However, he argued that it is now time to broaden out the research agenda, by exploring how accounting is accomplished in action (or practice). A neat way to think about the then new research program is the exploration of how accounting is enacted as a complement to how accounting is portrayed and commended 'in textbooks'. Implicitly Hopwood and those colleagues who shared his ambition, believed that accounting and those who practised it would benefit from an exposure to such knowledge and understanding, and do so in a variety of ways. The fabrication of a 'better' accounting practice was not necessarily the only nor the most important of these ways.

The study of accounting in action is widely recognised to have resulted in the establishment of an interpretive research tradition within accounting, where interpretivism provides an alternative methodology to the more familiar positivist methodology. Positivism should be understood to provide the default methodology for rigorous scientific enquiry and as such is how we would characterise such endeavours. The physical sciences, and experimental physics in particular, provide the 'purest' exemplars of positivistic scientific enquiry. By contrast the biological and behavioural sciences can be viewed to be less pure for the most part, although still seeking to partially emulate the physical sciences. Management science would seem to fall within the behavioural science categorisation, although superficially at least many of its practitioners embrace and manifest the attributes of the physical sciences in their work. Much mainstream accounting research is of a similar nature, including those empirical contributions that utilise research designs incorporating larger sized ('scientific') samples, questionnaires or highly structured interview surveys.

The turn to interpretive accounting research approaches necessitated researchers becoming competent in pursuing research based in case and field study research designs. By definition these are the means to gain knowledge and understanding of how accountants and their colleagues 'do' accounting in the organisational environment, whether this be practice, business, the public sector, etc. In addition to learning how to conduct such explorations, which is itself quite daunting, gaining access, arranging interviews, travelling, maintaining full records, analysing transcriptions, discussing with co-researchers (and possibly participants), etc., are all accompanied by their own challenges. Qualitative research of this sort was recognised to be time consuming, resource intensive, consistently precarious and arguably inefficient when compared with hypothesis formulation and testing, which for many at that time was more familiar territory. One way to conceptualise the situation is to say comparatively modest investment of time and resources in positivistic enquiries is repaid with shallower insights, although more of them - an interesting (and provocative) way to characterise quantitative research perhaps.

In parallel, the vanguard of interpretive accounting researchers also had to become acquainted with a

number of theoretical perspectives that cohered with qualitative research. As noted earlier this required them to engage with sociology, albeit not only sociology. This in turn meant they had to understand the relationship between two generic types of sociological theory. The first type of theory might be designated *substantive* theory, or as it has recently been designated domain theory (Lukka and Vinnari, 2014; Baxter and Chua, 2006). Such theory would encompass knowledge and understanding of some phenomenon, say, adolescent deviance or accounting (system) change, built up over time, refined, amended, etc. By contrast with the second type of theory, *method* theory is more difficult to comprehend. Method or framing theory names those theoretical perspectives, or ways of seeing, that are available to observe or frame enquiries. The idea that it was possible to see things differently depending on what framing theory you decide to use is initially a difficult one, as is the complementary observation that a way of seeing is also a way of not seeing. A number of framing theories were available to the pioneering interpretive accounting researchers including symbolic interactionism, the action frame of reference and ethnomethodology (cf Burrell and Morgan, 1979). By the end of the 1980s accounting researchers had generated a corpus of valuable insights on how accounting is accomplished in action, most of which bear scrutiny to the present day, e.g. Berry, Capps, Cooper, Ferguson, Hopper and Lowe (1985).

By this time the dominant framing theories within interdisciplinary and critical accounting research were of a more politically radical nature, and widely informed by Marxist theory (Roslender, 2017). Consistent with the philosophy of praxis that underpins such framing theories, its purveyors were not simply documenting accounting in action. They were committed to identifying its negative attributes as a basis for rethinking accounting as a positive, progressive force. Instead of seeking to use the insights gained from their enquiries to fashion 'better' accounting, which like the methodology of positivism was the default mainstream position, radical (critical) accounting researchers envisaged the creation of a 'better' society in which accounting theory and practice played an important role. Thirty years later this critical tradition continues to attract younger accounting researchers although it is no longer the dominant force that it was in the 1980s and 1990s.

A similar arrangement also exists in several other management disciplines.

The performative approach, together with the practice approach to accounting research, and that sometimes designated Foucauldian research, are components of a generic postcritical turn that originates in the mid-1980s and has dominated accounting research since the turn of the century. The term 'postcritical' is fiercely contested by many scholars who would claim that they are part of a progressive movement that necessarily differs from its critical counterpart. Less contentiously it is possible to recognise in performative and similar postcritical approaches a return to an interpretivist methodology realised via case studies and field studies that make extensive use of qualitative research methods and techniques to provide the rich detailed knowledge and understanding that defines such endeavours.

## Discussion and Conclusions

A decision to engage in performative research on business models has the consequence of propelling many researchers into a new habitat largely alien to them. Performative research is research in the tradition of social science, one that places greater emphasis on explanation and understanding than on prediction and hypothesis testing. It is research that results in the provision of partial knowledges that deny closure, thereby giving rise to what many would recognise as disorganised and frequently internally contradictory knowledge and understanding. Although there is no ban on attempts to organise or codify this knowledge and understanding, such exercises can never be considered to be final. The next piece of research has the capacity to fundamentally challenge what we know and understand. For those with a traditional intellectual formation, in which the arrangements associated with the physical sciences predominate, this can be an uncomfortable place.

Performative research, together with parallel research that enrolls alternative framing theory-based enquiries, is not to be understood to be work designed to contribute to the stock of managerialist or normative knowledge, in the first instance at least. The latter sort of knowledge is widely prized by practitioners, especially managers, providing them with answers or solutions

(prescriptions). Performative research approaches and techniques might be conceptualised to form one element of the *toolbox* for business model (in action) enquiries, as opposed to a chapter(s) in the *cookbook* for such enquiries. This does not mean that we have two separate stocks of knowledge and understanding that do not come together. Performative research has the capacity to enhance cookbook knowledges, often by the act of contesting that knowledge, by being more focused on posing questions rather than seeking (correct) answers.

A final observation is arguably the most challenging of all. Borrowing ideas from a different discipline to inform and underpin research enquiries in a field such as business models is a demanding exercise. Engaging with a performative research approach is not actually something that can be done in isolation. As noted earlier in the paper, any way of seeing is at the same time a way not seeing. It is therefore important that a researcher choosing to research business models from a performative perspective is aware of why s/he has identified it as the preferred option. This inevitably necessitates an investment of time and resources, in addition to those invested in actually pursuing and concluding the research. It is also important to avoid combining different approaches in an uninformed way, thereby potentially undermining the rigour demanded of social scientific enquiries. Arguably the greatest temptation of all lies in borrowing the terminology or discourse of a particular framing theory (ies) and liberally peppering the resultant narrative with concepts that may be valued for their currency rather than insights they afford.

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## The Effect of Business Model Innovation Announcements on Share Prices – A Study of US Listed Technology Firms

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### Abstract

**Purpose:** The purpose of this paper is to examine the immediate effect of different types of business model innovation behavior by US listed technology firms on the market performance of equity securities, in this case the share prices of the firms in question.

**Design/Methodology/Approach:** This study employs a quantitative research design, based on stock market data of US listed technology firms. A sample of 147 firms were chosen, considering the time period of 2014-2016. The stock market data was then matched with secondary data, outlining the firms' business model innovation behavior.

**Findings:** Our findings indicate that the stock market awards frequent business model innovators more than less frequent business model innovators, controlling for factors such as sub-industry belonging and proxies for size of the firm.

**Research limitations/Implications:** The study is one of the few that connects business model innovation with stock market performance and thus contributes to research by empirically connecting business model innovation with different performance metrics. Obviously, the study has inherent limitations in terms of single industry, a single stock market and variables used.

**Practical Implications:** Practical implications to be drawn from this study includes evidence towards how the stock market values and awards announcements of business model innovations, which is of value for corporate executives, investors and stock market analysts alike.

**Originality/Value:** Our study brings new insights into how business model innovation is perceived by stock market analysts and investors and consequently how announcing business model innovations can be used as a managerial tool by management to improve the firm's performance on capital markets.

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Keywords: Business models, business model innovation, stock market, share prices, high-tech, innovation, business model portfolios

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## Introduction

Over the past decades, several studies and meta-studies (e.g. Rosenbusch et al. 2011) have indicated an overall positive connection between firms' innovative behavior and their performance metrics. That is, in terms of their financial performance, extended market share or international expansion, among other things. While many previous studies have focused upon issues including R&D expenditure as a proxy for innovation, or perhaps on the release of new products and linked these types of innovative behavior to performance, significantly fewer studies have looked at business model innovation (BMI) and its contribution to a firm's performance on a larger scale.

Business models are a conceptualization or a description of how a firm do business (Zott and Amit 2007) and consist of several inter-related dimensions, such as value creation; value delivery and value capture, as well as, frequently, value proposition and value network (e.g. Shafer et al. 2004; Osterwalder and Pigneur 2004; Clauss 2016). Business model innovation is, consequently, a change that the focal firm undergoes in either one or several of these dimensions, or its accompanying resources, capabilities or external relationships (Gerasymenko et al. 2015).

A plethora of case study evidence on business model innovation gives credence to the transformative effects that business model innovations can have for a firm, in terms of new business opportunities are being captured, new revenue streams being opened and increased profitability (Abrahamsson 2016). While business models and business model innovation have often focused on startups or other forms of younger, entrepreneurial ventures (e.g. Johansson and Abrahamsson 2014; Malmström and Johansson 2017), its importance is arguably at least at the same level for more established firms. Furthermore, a study conducted by IBM in 2006 found that companies with a focus on business model innovation had an annual compound growth rate of five times, or more, than firms that have an innovation focus geared towards either operations or new products and services. Similarly, Kim and Min (2015) underline how adding new business models positively affects incumbent firms' performance, contingent on the right alignment of potentially conflicting assets between the new and the

old business model. Moreover, Zott and Amit (2007) further emphasize the performance effect of different business models, discovering that innovative business models positively affects firms' stock market value. Furthermore, the authors emphasize business model innovation as a source of wealth creation for firms.

Established incumbent firms can often be found as publicly listed companies on the stock market. Any significant business model relevant changes in company operations must, therefore, be communicated to the public. Provided that the performance effects of business model innovation are often assumed to be positive, such news or announcements ought to positively affect the firm share price, assuming an efficient or at least a semi-efficient market. In some instances, however, business model innovation can pose challenges for companies. For instance, by adding a new business model which yield conflicting assets for the focal firm. This can be exemplified by bringing a new online business model into a brick-and-mortar company. As such, assets are not complimentary in regard to the new and the old business model, which can have negative potential business performance impacts (Webb 2002; Kim and Min 2015) and thus potentially influence stock market performance negatively as well.

Previous studies have examined the stock market impact of non-financial information announcements (Eccles, Krzus, and Serafeim, 2011) in a similar fashion; such as that related to governance and sustainability. These studies found positive effects, although no extant research focused on business model innovation information, which we argue, might create an immediate effect on the market performance of listed companies' shares. While business model innovation can be challenging and a risk to undertake (i.e. Kim and Min 2015), the risk of not undertaking it, can be worse. *"... the greatest innovation risk a company can take is to decide not to create new businesses that decouple the company's future from that of its current business units"*. (Christensen et al. 2016, p. 40)

In particular, we are interested in the reactions from the buy-side to announcements of business model innovation, causing an outperformance in share prices of companies. Market performance at the securities level has been viewed as one of the more immediate

indicators of market interest especially from the buy-side (Derwall, J., Koedijk, K., & Ter Horst, J., 2010; Hong & Kacperczyk, 2009 etc.) and can be taken as a measure of the business model innovation expectation effect. It needs to be noted that along with the significance of market performance for the buy side, the sole motivation for purchase being the expectation of future appreciation of the asset and the subsequent sell, there is no conclusive evidence linking the investor perception of BMI, or any other non-financial news announcement, to an actual improvement in the firm's operations or competitive position (Barber, Heath, Odean, 2003). Subsequently, as long as the firm's dividend policy thus becomes irrelevant the possible actual improvement is largely redundant for the buy side as well (Miller and Modigliani, 1961).

The purpose of this paper is, therefore, to examine the immediate effect of business model innovation behavior on the market performance of equity securities. Hence, our explicit research question is:

What are the stock market performance implications of announcements of business model innovation?

Importantly, we appreciate that no organization exists within a vacuum, that is other elements such as strategy, competitive advantage and positioning are also highly relevant to their success. These are, however, beyond the scope of our focus. Concretely, we study a random sample of 147 market listed technology companies from the USA and the firms' business model innovation behavior within the time period of 2014-2016, with quarterly aggregated stock market data.

The paper is organized as follows: we review the extant literature on the object of study, followed by describing the research methodology, and subsequently display the results of the study, which are analyzed and discussed. Finally, we will deliver relevant further recommendations for academia and managerial practice, based on our findings and analysis.

## Literature Review

### Business Models and Business Model Innovation

Whilst business models in terms of creation, delivery, and appropriation of value, have arguably always been

tacitly integrated in the economics of doing business (Teece 2010), it is only in recent decades that the concepts have gained more conceptual clarity within academia. The modern wave of business model research chiefly emanates from the IT boom at the end of the last millennium when new technology (fueled by the emergence of the Internet and e-business) necessitated new business models to explain how companies would create and capture value from the technical innovations brought to the market (Magretta 2002; Zott and Amit 2011).

Business models can broadly be viewed upon as representations of how firms do business (Zott and Amit 2010; 2013). However, definitions that are more precise have offered differing perspectives over time. Shafer et al. (2005), for example, view business models as the following: "*we define a business model as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network*" (Shafer et al. 2005, p. 202). Doganova and Eyquem-Renault (2009) however, consider business models to be a scale model of a new venture, which has the purpose of demonstrating the venture's feasibility and can be facilitated to attract necessary external partnerships (financing, customers, suppliers etc.).

Other scholars, however, such as Osterwalder et al. (2005) and Teece (2010) connect elements of a business model back to the underlying mechanisms of value creation and value capturing provided by Shafer et al. (2005). Thus, they deliver a more tangible depiction of business models than the scale model representation of a venture, as suggested by Doganova and Eyquem-Renault (2009). Intrinsically, Osterwalder et al. (2005) and Teece (2010) share a broadly similar view, as they essentially view business models as the design of how to identify, create and deliver value and how to capture parts of this value (generated by a particular business model) back to the focal firm.

Beyond what can be considered the core dimensions of a how business model (i.e. how value is created, delivered and captured) perspectives on value propositions and value networks can also be incorporated (i.e. Shafer et al. 2005; Clauss 2016). The value proposition is a representation of the unique customer value that the firm's business model brings to the customer and subsequently which customer pains it will solve

(Chesbrough 2010; Lindgren et al. 2010; Clauss 2016). The notion of value network highlights that creation and capturing of value takes place in a context of partnerships, external to the focal firm. These include suppliers, customers and other stakeholders in the network or business ecosystem (Shafer et al. 2005; Lindgren et al. 2010; Autio et al. 2017).

Business models cannot, however, be static structures because their ability to create and capture value can greatly be diminished, especially in dynamic contexts such as high technology, where business model innovation should accompany technological innovation for the focal firm (Teece 2010).

What constitutes an actual business model innovation, and not just an incremental change or adjustment of the business model, has been discussed in academia (e.g. Björkdahl and Holmen 2013; Gerasymenko et al. 2015).

Gerasymenko et al. (2015) argue that a company needs to undergo what they call "substantial business model change" in order that the change to the current practice is enough to be a real relevant business model innovation.

As such, substantial business model change refers not only to the generation of revenue or cost management (i.e. creating and capturing value), but also change that affects the firm's core resources, capabilities or external relationships such as the value network and the focal firm's position within the value network (Gerasymenko et al. 2015). Business model innovation can, moreover, emerge organically within an organization, through the deployment of dynamic capabilities (e.g. Teece 2010; Al-Aali and Teece 2013; Abrahamsson 2016) for example. To exemplify, business model innovation can disrupt an existing industry (Christensen et al. 2016) by bringing in a new business model, such as AirBnB connecting apartment owners with visitors (Ritter and Lettl 2017) and thus disrupting the hospitality industry by bringing buyers and sellers together on a digital platform. However, perhaps more common are business models which are new for a focal company. A well-known example of this is Amazon, innovating its portfolio of business models to encompass not only e-commerce, but also B2B focused cloud-based web services (Ritala et al.

2014). The above examples fit into the definition of substantial business model innovation, as they imply new management of costs and revenues, new value network relationships, new resources and capabilities. For the purpose of this study, these are the types of substantial business model innovations we seek to distill, as they are the ones most likely to impact performance, in our case stock market performance. While for instance a minor change in customer segments targeted can constitute a business model innovation (Osterwalder and Pigneur 2010), it can scarcely be considered a substantial one and would likely have a relatively small impact on stock market performance. Hence, only business model changes that can be considered substantial business model innovations are considered in this paper. This also excludes mere product innovations, such as releasing a new or incrementally updated product or product lines.

In addition to developing business models organically, firms can also add new business models by engaging in mergers and acquisitions (M&As) and, thus, develop portfolios of business models (Christensen et al. 2016; Aversa et al. 2017). Here, an acquired firm's business model is used in parallel to the acquirer's business model. Such an addition of an "acquired" business model can, of course, also be considered substantial business model innovation for the acquiring firm - provided it is substantially different from the firms' existing business model(s). As argued by Christensen et al. (2016), new business models through M&As can lead to internal disruption of the business, necessary for renewal and growth.

### **Stock Market Performance and Business Model Innovation**

Market performance at the securities level has been viewed as one of the more immediate indicators of market interest, especially from the buy-side (Derwall, J., Koedijk, K., & Ter Horst, J., 2010; Hong & Kacperczyk, 2009 etc.). Special attention was paid to stock price volatility as an important factor in the comparison of risk and reward between stocks and other securities (Ambrosio, 2008). Historical data on stock volatility can, thus, be taken as a measure of a companies' performance and linked to independent variables, such as business model change. Though current research lacks evidence of such a relationship, there have been attempts to prove the existence of such in adjacent areas.

The extant research abounds in evidence of a relationship between innovation and market value. Stock price volatility has been linked to innovative practices of firms. Pakes (1981) finds a positive correlation between market value and patenting activity, whilst Hall et al. (2005) relate stock performance to R&D practices. Mazzucato (2006) examines how innovation dynamics affect expectations about future firm growth through stock volatility, where a significant relationship between the intensity of innovation and stock volatility is discovered. Business model innovation can also be seen as a more sustainable form of innovation, which is more difficult for competitors to imitate or replicate than mere products or operational processes (Amit and Zott 2012), which should add to the attractiveness of business model innovation for stock market investors.

As for innovation in business models, the current research lacks findings in this area. Amit and Zott (2009) explore the change in Apple stock prices after the iPod business model was introduced, they disregard, however, the fact that a more significant change happened after the introduction of the second business model (iPhone), which proves our position. To note, when referring to iPod and iPhone here we are not referring to the products as such, but to the new business models and ecosystems surrounding these two products. The business model of iTunes, that is the system for purchasing music for the iPod, for example. Another is the integration between the App Store and carrier partnerships creating the iPhone's surrounding business model. As such, Apple is also a prime example of the adage of Teece (2010), which is that technological innovation often is accompanied by business model innovation. Consequently, the link between business model innovation (BMI) and share performance has not been established, instead of which the BMI engagement was linked to financial performance thus leaving the BMI-to-stock correlation an open question.

However, as it is put by many the fluctuations of stock prices are not necessarily affected by companies' financial performance, but rather by manipulations, rumors and speculation among the buy-side market participants (Fenton O'Creevy et al., 2005; MacKenzie, 2006; Shamsudin, Mahmood, & Ismail, F., 2013) thus, BMI (when announced) can have an immediate effect upon the share price. The link between non-financial

information announcements and stock price fluctuation was proved in Eccles, Krzus, and Serafeim (2011) and a number of other studies. Additionally, Kim and Youm (2017) found that social media postings made by the focal company or its customers could influence analysts' stock recommendations and, subsequently, the share value. Such social media postings may for instance be concerning business model innovations. Therefore, we conclude that market reactions should follow the announcements of significant business model changes. In summary, the market's knowledge regarding business model innovation, in publicly listed firms, is likely to be an example of news and announcements that the market should react to positively. This is further supported by past research, highlighting links between business model innovation and different firm performance metrics (i.e. Zott and Amit 2007; Kim and Min 2015).

Evidence also points towards the fact that firms, repeatedly engaged in business model innovation, achieve higher growth in operating margins as compared to firms engaging in other types of innovative behavior, such as product innovation (IBM 2006). Considering these arguments regarding stock market behavior and business model innovation, we present the following two hypotheses:

**Hypothesis A:** Announcements of business model innovation have a positive effect on market performance of equity securities within high tech industries.

**Hypothesis B:** The amount of business model innovation announcements positively affects the market performance of equity securities within high tech industries.

## Methodology

The data used in this study comes from two different sources. First, the historical stock prices of US companies listed in financial markets were derived from Bloomberg data terminal. Second, BMI engagement by the chosen companies was identified through analyzing public announcements of business model innovation, published on the companies' websites, press releases, business press articles and financial statements. The definition of BMI and, thus, the

identification of BMI activities from the secondary data, was done by using the definition of substantial business model innovation, as provided by Gerasymenko et al. (2015). I.e. focusing on business model change that influences how the focal firm generates revenues or manages its costs, but also considering areas such as core resources, competences/capabilities or relationships. It should also be noted that M&A activity could constitute a new business model, assuming the acquired firm has a different business model than the acquirer, which is in accordance with Christensen et al. (2016). Substantial business model innovation would hence not include, for instance, a change in customer segment targeted. Nor release of new products or product lines, as that would be in the realm of product innovation (e.g. Teece 2010; Gerasymenko et al. 2015; Abrahamsson et al. 2019).

A sample of 147 companies publicly listed in the United States was randomly selected from 3000 listed technology firms, over the period of 2014 - 2016 by the quarter, derived from the Bloomberg Terminal software. Bloomberg (2017) divides the technology sector into nine different sub-industries, namely *Technology Hardware and Storage*, *Technology Hardware and Equipment*, *Software and Services*, *Software*, *Semiconductor and Semiconductor Equipment*, *IT Services*, *Internet Software and Services*, *Electronic Equipment*, *Instruments and Components* and *Communication Equipment*. The technology sector was chosen for its perceived high degree of change and potential for business model innovation. In other words, the rate of technological change in the industry should be matched by also announcing and implementing new business models often, in line with Teece (2010). Therefore, we chose the high-tech sector as a potentially fertile ground for this research endeavor.

Given the complexity of market performance and in response to calls for a more detailed assessment of multiple performance indicators (Miller, Washburn, & Glick, 2013), we focus on 4 market performance indicators: exponential growth, CAGR, earnings per share (EPS), and volatility expressed by standard deviation.

CAGR – Compound average growth rate used in investment as a measure of geometric progression, which

assumes that a variable (say share price) grows at a constant rate of return compounded over a sample period of time (Anson et al, 2010). The advantage of using CAGR method is stated as a tool able to provide data on how the investment performed over a period of time provided the investment securities have the same starting date, thus CAGR (IVESCO). It is calculated as follows:

$$CAGR = [(V_n/(V_0))]^{1/n} - 1$$

Where

$V_n$  is the ending value

$V_0$  is the beginning value

$n$  is the number of steps (years/ time periods) between the values to compare

Exponential growth, that is predicting exponential growth by using existing data, is a pattern of data that shows greater increases with passing time, creating the curve of an exponential function. Exponential growth formula has many uses in finance, financial modelling being only one example, stock prices on the other hand have only recently been discovered to demonstrate exponential growth patterns (Jackwerth and Rubinstein, 1996; Stango and Zinman, 2009; Dempsey, 2015), where the growth rate proxies for expected return (Leiss, Nax, Sornette, 2015).

The formula for exponential growth of a variable  $x$  at the growth rate  $r$ , as time  $t$  goes on in discrete intervals, is

$$x_t = X_0 [(1 + r)]^t$$

where  $X_0$  is the value of  $x$  at time 0.

The rate, thus, shows a growth trend over the measured time; the growth rate over 100% means that the stocks more than doubled in price over the period, the rate of 200% means tripling, etc.

Standard deviation of stock prices - in finance, standard deviation is a commonly used statistical measure, which is applied to the annual rate of return of an investment; it shows historical volatility of the investment. The higher the standard deviation of a security

the higher the price range of that security over time. It is calculated as follows:

$$\sigma = \sqrt{((\sum(x - \mu)^2)/N)},$$

Where

$x$  – price of individual stocks in the population  
 $\mu$  – mean of the individual stock price over time  
 $N$  – number of stocks in population

To test the hypotheses we need some additional controls, as a proxy for firm size we are using 'market cap', the measure considered to be forward-looking, market oriented, and involves firm growth opportunities and equity market condition (Li, Dang, 2015, 2018); and to avoid local effects we are using sub-industry dummies. The measures used have certain drawbacks when applied to investment securities historical prices. CAGR does not show possible volatility and standard deviation does not show negative movements of security prices. To eliminate those drawbacks, we combine the measures and run multiple regression on standard deviation of stock prices to CAGR to find the value of R, with stronger correlation of volatility to more positive growth indicating abnormal positive returns to market value.

## Results

To test the hypotheses, we specify and estimate a set of similarly unrelated regressions (SUR) with market indicators as dependent variables (DVs) and BMI as core independent variable (IV), controlling for market capitalization and industry affiliation of the firm. The lack of other, especially general market, controls is based on our assumption of the efficiency of the US stock market, which implies that all relevant information immediately becomes reflected in the stock prices (Fama, 1970, 1991, 1998) as later evidenced in Malkiel (2003) and Fenton O'Creevy et al. (2005), which claim that the market price itself is a perfect gauge of all relevant information and the way market reacts to it. As market performance indicators are likely to be affected by the same unobservables, SUR is a preferred specification as it allows to account for contemporaneous correlations (Greene, 2012). We include market cap as a proxy for firm size (DeAngelo, DeAngelo, and Stulz, 2006; Dang and Li, 2015, 2018) and sub-industry

dummies to account for sector-specific effects – whilst all the firms in the sample belong to high technology class, the BMI effects are likely to depend on the specific line of business of each company.

The results suggest that only two out of four models as significant at conventional level: DV1: growth ( $p=0.0162$ ) and DV3: CAGR ( $p=0.0045$ ). Both hypotheses are fully supported in these models as firms exhibiting high rates of business model innovation (BMI=2) exhibit higher growth ( $\beta=8.238$ ,  $p<.1$ ) and CAGR ( $\beta=0.020$ ,  $p<.01$ ) in comparison to firms with no or low levels of BMI. While we observe that rate of BMI is not reflected in share price volatility and earnings per share at conventional significance levels, the direction of the effect of BMI on earnings per share is in line with the expectations, as innovating multiple elements of the business model is positive ( $\beta=1.546$ ) (Table 1.).

However, it should be noted that stock prices do not depend on the actual implementation of BMIs in the companies (rather on their announcements) reflecting the market expectations of future BMI performance. The actual BMI performance is reflected in accounting results, which do not necessarily cause market reactions. Thus, the announcements of BMI bear more significance to the buy-side market reactions.

## Discussion

This paper set out to investigate whether business model innovation (BMI) influences the market value of equity securities, in this case common stock, in the context of high technology firms publicly listed in the United States. As such, the paper has yielded several interesting findings, to be further discussed in this section.

Firstly, the announcement of a single new BMI announcement did not yield a strong positive reaction from the stock market across our four dependent variables. In fact, in some cases the responses to such an endeavor were seen as a negative by the stock market, as measured by the coefficient. However, for exponential growth and cumulative growth, we noted a positive relationship for single business model innovation, although not quite a statistically significant one. While this does not support our first hypothesis fully in terms

	Model 1. DV <sub>1</sub> : growth				Model 1. DV <sub>2</sub> : Volatility				Model 3. DV <sub>3</sub> : CAGR				Model 4. DV <sub>4</sub> : epst12m			
	Coef.	Std. Err.	t	P>t	Coef.	Std. Err.	t	P>t	Coef.	Std. Err.	t	P>t	Coef.	Std. Err.	t	P>t
<b>BMI</b>																
1	3.468	4.162	0.830	0.405	-0.328	1.661	-0.200	0.843	0.010	0.006	1.530	0.127	-0.184	0.594	-0.310	0.757
2	8.238	4.681	1.760	0.079	0.800	1.868	0.430	0.669	0.020	0.007	2.810	0.005	1.546	0.668	2.310	0.021
<b>Marketcap</b>	0.000	0.000	0.730	0.466	0.000	0.000	0.580	0.562	0.000	0.000	1.350	0.178	0.000	0.000	1.070	0.284
<b>Subindustry</b>																
COMH	10.147	12.389	0.820	0.413	7.002	4.945	1.420	0.157	0.042	0.019	2.200	0.028	1.663	1.769	0.940	0.347
COMS	15.697	13.270	1.180	0.237	6.874	5.297	1.300	0.195	0.038	0.021	1.840	0.067	2.158	1.894	1.140	0.255
DEF	85.511	23.205	3.690	0.000	11.001	9.263	1.190	0.235	0.019	0.036	0.540	0.589	0.009	3.313	0.000	0.998
ECE	-0.286	23.205	-0.010	0.990	-1.967	9.263	-0.210	0.832	0.012	0.036	0.350	0.730	0.628	3.313	0.190	0.850
EOE	-0.204	23.205	-0.010	0.993	0.095	9.263	0.010	0.992	0.025	0.036	0.700	0.486	0.972	3.313	0.290	0.769
INT	12.776	14.030	0.910	0.363	7.188	5.600	1.280	0.200	0.029	0.022	1.330	0.185	-0.250	2.003	-0.120	0.901
SEMC	6.140	12.338	0.500	0.619	7.816	4.925	1.590	0.113	0.048	0.019	2.510	0.012	2.486	1.761	1.410	0.159
SFIN	13.926	23.205	0.600	0.549	3.058	9.263	0.330	0.741	-0.030	0.036	-0.820	0.412	-1.240	3.313	-0.370	0.708
SOFT	12.376	12.157	1.020	0.309	5.964	4.853	1.230	0.220	0.024	0.019	1.260	0.207	1.319	1.736	0.760	0.448
TELCE	0.314	14.229	0.020	0.982	0.697	5.680	0.120	0.902	0.030	0.022	1.340	0.180	1.266	2.031	0.620	0.533
const	13.089	11.602	1.130	0.260	4.088	4.631	0.880	0.378	-0.030	0.018	-1.660	0.097	-0.436	1.656	-0.260	0.792
R <sup>2</sup>	0.1526				0.0616				0.1880					0.1229		
F	2.09				0.73				2.43					1.36		
P	0.0162				0.7209				0.0045					0.1833		

Table 1: Effects of BMI on market performance: estimates from seemingly unrelated regressions

of statistical significance, there are several interesting possible explanations. One could be that a single new business model innovation, i.e. completely re-directing the company's business, can have negative performance impacts in the short-run. As this study only measures relatively short-term investor reactions, risk-averse investors could therefore decide to react negatively to announcements of these types of potentially risky business model innovations.

This is of course consistent with notions of BMI being a risky endeavor to pursue (e.g. Yip 2004; Christensen et al. 2016), as it can be likened to moving from one equilibrium position through the disequilibrium to find the new equilibrium, i.e. the new business model (Yip 2004).

Secondly, and conversely, when looking at firms announcing two or more business model innovations in the period of the study, we can see a very clear positive relationship with such announcements and stock market reactions for two out of four dependent variables, which supports our B hypothesis regarding quantity of business model innovation. For the other two variables, volatility and earnings per share; results were close to but not quite significant, especially for earnings per share. Obviously such firms are highly probable to engage in so-called business model portfolios (Abrahamsson 2016; Aversa et al. 2017) and, thus, operate their business in a multiple business model regimen. According to Aversa et al. (2017), a company with a business model portfolio has at least two simultaneous approaches for either creating or capturing value. As a company innovates and creates new business models, it does not necessarily mean that the old business model is abandoned but they rather co-exist, such as web services and e-commerce in the case of Amazon (Ritala et al. 2014; Kim and Min 2015; Christensen et al. 2016).

From an investor's point of view, it can be argued that BMI activities undertaken as part of a business model portfolio can reduce the expected risk of the BMI. Thus, markets react positively to multiple BMIs pursued by companies, rather than singular non-portfolio BMI engagements. This is in line with Christensen et al. (2016), who argue that business model portfolios are beneficial for companies, including business models coming from M&A activities. Furthermore, portfolios,

from a financial point of view, have the inherent ability to reduce risk through diversification.

The same logic can be applied to business model portfolios as business models can be viewed as key, albeit intangible, assets (Abrahamsson 2016) for a company. This is due to how a business model can potentially impact profits and losses for the company and that it has the ability to enable business opportunities (Barney 1991). Consequently, having a business model portfolio provides a form of asset diversification and asset diversification reduces risks for investors. Therefore, stock market investors may look more favorably at companies with business model portfolios engaging in multiple business model innovation activities affecting only certain markets, technologies, business units or subsidiaries, as compared to firms pursuing a single, company-wide business model innovation.

## Conclusions and Implications

As this study aimed to investigate the potential effects of business model innovation on the market price of equity securities and stocks, a number of conclusions and implications can be made based upon the findings of the study and the discussion of those findings.

Stock market investors tend to be risk-averse, as the risks of investing money in stocks is generally substantially lower as compared to, for instance, new venture investment by business angels or venture capitalists (Hogan et al. 2017). However, especially in the dynamic field of high-technology, coming up with and implementing new business models, is pertinent for remaining competitive and in the case of high-tech firms in this study, achieving a fit between their technical innovations and vending those innovations to the market. New business models are, however (as with any larger, transformative, change within a firm) an inherent risk (Yip 2004).

Risk-averse stock market investors, hence, might (accordingly) not react positively to a singular business model innovation, whose intent is to transform a company and therefore the company's future is "bet" on that new business model in question. The same risk-averse investor will more easily, however, embrace a company that is already engaging in multiple business

models, thus conducting several business model innovation endeavors within the portfolio. Such BMI activity by business model portfolio firms does not “bet” the company on a single model change and allows the company to pursue a multitude of diversified business opportunities across different markets and technologies. And as such, it elevates concern of bad short-term performance due to BMI by stock market investors, as the impact would likely be smaller than in the case of singular BMI.

This study, however, only considers relatively short-term effects of BMI announcements. Over time, companies in a single business model regimen might still benefit greatly (in terms of performance) with the new business model. That being said, this study has its focal point more on investor perceptions than actual business performance. That is also a limitation of this study, others include a single country-focus, a relatively few number of firms and a single industry. Further research in this area might do well to mitigate all these factors, as through looking at cross-country samples across a few or several different industries.

Another limitation to our research is the limited information regarding the precise number of BMIs within the companies, which did not allow us to assign continuous values to the BMI variable; nevertheless, it can be done in the future studies.

Regardless of the study’s limitations, it contributes to recent academic debates with regard to business model innovation and the effects of different types of performance that business model innovation can have. Few studies have looked at BMI in conjunction with stock market data before and more studies of this type are likely needed to solidify results for more generalized conclusions.

Finally, the study gives the signal to managers in high-technology listed firms that business model portfolios and multiple business model innovation, while each being smaller “bets” is looked upon favorably by stock market investors in the short term and can, therefore, also be good for the focal company in the shorter term. Hence, the study provides empirical support to the notion that listed firms should dare to be innovative and experiment with several concurrent business models in order to pursue new growth opportunities, as the stock market rewards such behavior and the (arguably) balanced risk profile of this type of innovative behavior.

Whether pursuing a business model portfolio strategy provides superior benefits in the long-term as opposed to a single business model regimen, is, nevertheless, not answered by this study because this study only considers the relatively short-term effects of business model innovation announcements rather than long-term effects of new business model implementation

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# Exploring Potential Changes in the Business Model: The Impacts of Using Human-Centered Personal Data As A Resource

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## Abstract

**Purpose:** Services are evolving from generic to personalized, and the reverse use of customer data has been discussed in both academia and industry for the past few years. The aim of this study is to understand the potential changes in the business model when adopting a human-centered personal data management approach.

**Design/Methodology/Approach:** The primary data was gathered over the time in recorded and transcribed workshops, in which future personal data -based services were conceptualized by analyzing future scenarios from a business perspective.

**Findings:** The results have implications to theory and practice, indicating that adopting personal data management principles causes changes in the business model, which, if successfully managed, may provide access to more resources, potential to offer better value, and a larger business environment.

**Research limitations/implications:** Being a single case study imposes restrictions to the generalizability of the results. Employing a value creation perspective, and expanding the scope of this study to include actors from different sectors would improve the validity of the research.

**Social implications:** The study views the future business landscape with human-centered personal data management lenses. The exploration of the effects of an approach that benefits both people and businesses provides a positive societal aspect.

**Originality/Value:** While a few studies have examined the linkage between business models and personal data usage, no empirical studies have looked at how a company's business model may change due to adopting a novel personal data management approach. This paper shows one way to think about this issue.

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Keywords: business model, personal data, preventive healthcare, personal data management, human-centered

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## Introduction

The health care sector is slowly making progress towards preventive, predictive, personalized and participatory care and wellbeing (Hood & Flores, 2012; Baldwin, 2010; Collins & Varmus, 2015; Porter & Lee, 2013). Especially in preventive activities in healthcare, information is an essential factor, and personal data are invaluable in understanding what makes a person healthy or ill (Beirão, et al., 2017; Pinho, et al., 2014), and are the key to preventive healthcare (Ratia, et al., 2018; Hood & Flores, 2012).

However, utilizing data is not an easy task. The increasing worries about data privacy are frequently in the news and the ethics on the uses of personal data are topical. *MyData* is an approach on personal data management which has emerged in Europe to address needs of companies to access data while simultaneously fulfilling digital human rights (MyData Alliance, 2017; Koivumäki, et al., 2017; Kemppainen, et al., 2016). The target of this human-centered personal data management (i.e. *MyData*) approach is to enable decentralized management of personal data from different sectors improving interoperability and make it easier for companies to comply with tightening data protection regulations, while also allowing individuals to change service providers without proprietary data lock-ins (Poikola, et al., 2014).

For this target to become reality, companies aspiring to use human-centered data to advance their services need to consider the impacts of this approach on their business model. Organizations aiming to benefit from the increasing volumes of personal data often lack consistent business models and need external resources to create and capture new value (Frankenberger, et al., 2014). While the need to change or adapt the business model to achieve sustained value creation is acknowledged (Achtenhagen, et al., 2013), there is a research gap in the literature concerning business models in this field (Kemppainen, et al., 2016). While a few studies have examined the linkage between business models and personal data usage (Redman, 2015; Wang, 2012; Brownlow, et al., 2015), we are aware of no empirical studies having explored the potential impacts on the business model by the implementation of human-centered personal data management principles. In this study, our purpose is to understand how business

model is perceived to be impacted when human-centered personal data management is used as an enabler for data accessibility, and when the data is used as a resource. We study this in the context of a preventive occupational healthcare service.

This study uses a case study approach with two case companies sharing a goal of understanding the potential changes in business model due to adoption of personal data management approach as an enabler, and due to using personal data as a resource. The results are of practical relevance for companies navigating in changing competitive environments. Understanding business model change is incremental to seize new business opportunities and to act as an approach to mitigate the risk of inertia to change (Achtenhagen, et al., 2013).

## Background

### Business models

Technological innovations have disrupted all sectors of business, and the pervasiveness and growing volume of data is perhaps the most impactful phenomenon of this advancement. Consequently, the capability to utilize the available data is an increasingly important competitive advantage for all businesses (Huhtala, 2018; Brownlow, et al., 2015). Keen and Qureshi (2006) argue that a company aiming to become a new entrant or create new business opportunities needs a business model to articulate the changes it needs or wants to make.

Traditionally, value exchange between actors, service, and the customer is seen as the flow of money, other benefits, resources and activities (Palo & Tähtinen, 2011). In addition of being descriptions of these key elements of business, business models have been approached as stories explaining how business works (Magretta, 2002); boundary objects made of narratives and calculations (Doganova & Eyquem-Renault, 2009); framing devices that influence and shape actions of business partners (Mason & Palo, 2012), as well as market devices that act in ways that enable companies and entrepreneurs to innovate markets (Doganova & Eyquem-Renault, 2009). While there are many definitions for 'business model' in the current literature (Baden-Fuller & Morgan, 2010; Chesbrough, 2007; Kindström, 2010), experts agree that they help companies of all sizes understand how to

convert resources and technological potential into economic value (Chesbrough, 2006). The business model is important to any organization because it provides means to understand, analyze, communicate and manage strategic choices (Al-Debei & Avison, 2010; Shafer, et al., 2005; Otjacques, et al., 2007). A convincing logic of value creation is imperative to succeed, and business models serve as conceptualizations to describe and implement that logic (Ghaziani & Ventresca, 2005; Willemstein, et al., 2007). Indeed, business models are constantly evolving in line with strategic decision making, mirroring this ongoing and iterative process (Magretta, 2002).

In addition to being developed, business models must also be managed, which is an inherently risky business. Commercializing an idea or technology is unsuccessful most of the times, and even when successful, it may create powerful inertia inside the company which makes it even harder to change their business model. (Chesbrough, 2006).

Theoretical investigations on business models go into specific components of the business model and how they help explain the business logic of companies. One of the most famous illustrations of the business model and its components is the Osterwalder Business Model Canvas (Osterwalder & Pigneur, 2010), a conceptual tool that makes expressing the business logic of a specific organization easier (Al-Debei & Avison, 2010). The components of the canvas are *key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure, and revenue streams*. There are more extensive interpretations of the business model components, as well. For example, Onetti et al. (2010) provided an analysis based on 70 different definitions published from 1996 to 2009. The work of Onetti et al. (2010) was inspired by Shafer et al. (2005), providing a reduced list of 26 components of business models. Despite being semantically slightly different, both interpretations represent same objective being not just depictions of reality, but also instrumental tools which can answer the same questions regarding the prospective future of the company (Doganova & Eyquem-Renault, 2009). Doganova and Eyquem-Renault (2009) suggest that one of the most impressive feature of business models is that they are circulated among and presented for various stakeholders of the company, at the same

time building the network for the company. Zott and Amit (2010) refer to this idea as “business models in action”. We adopt the approach in this study as the case companies are cooperatively developing a business model. However, we opt to use the Osterwalder business model canvas as an analytical tool to capture the changes in the business model due to novel personal data management approach.

### **Personal data**

Personal data is important currency for companies and society. The EU General Data Protection Regulation defines personal data as any information relating to an identified or identifiable person. (European commission, 2016). Personal data has long been collected for various benefits. Aggregating customer activity and history to understand the customer better and target marketing efforts more efficiently is a part of virtually every business. Gaining insight, efficiency and competitive advantage are the main reasons for collecting personal data (Ericsson, 2013). Utilizing vast amounts of personal data can bring business opportunities for service providers, helping them to cater to the needs of the individual consumers. However, customer data is often seen as competitive advantage which cannot be shared with other organizations (Ctrl-Shift, 2014). This is the current situation in which personal data is abundant but resides in silos. The MyData initiative strives to release the data from their silos, for the good of the businesses and the individual people.

There is an increasing interest among researchers and practitioners to investigate the value and various uses of personal data (Saarijärvi, et al., 2014). Mobile devices and wearable sensors are perpetually adding information to the vast repositories of personal data (Li, et al., 2011). Within health and wellness domain, the motivation to use this kind of data is typically found in self-reflection and the help it provides in lifestyle changes (Carver & Scheier, 2001). However, this data is currently benefitting mainly those who are already active – not those who would benefit the most; e.g. people with chronic diseases and poor eating and activity habits.

The legality in the use and sharing of personal data depends on the context in which it is used (Otjacques, et al., 2007). As the volume of personal data rapidly increases, so does the importance privacy and ethical

use of data. Data ethics draw foundations from computer and information ethics but refines the level of abstraction of enquiries from being information-focused to being data-focused. The extensive use of personal data, and algorithms to analyze them for decision support, coupled with the reduction of human involvement and oversight of automated processes, raise issues concerning the fairness, responsibility and respect of human rights. (Floridi & Taddeo, 2016). These concerns are reflected in recent regulations. For business organizations, the implementation of these regulations can increase the overall costs of harvesting personal data (Ctrl-Shift, 2014), but some see the regulations as good and fair frameworks allowing smoother operation in the business networks for all actors (Huhtala, 2018). Whichever actors do use personal data, must process it with sensitivity, since privacy issues and data protection can be challenging, especially in the healthcare domain.

There are many initiatives emerging around the globe with the aim of resolving these ethical issues. *MyData* is one of these human-centered data management approaches which aim to simplify data flow and open new opportunities for businesses to develop innovative personal data -based services while preserving privacy (Kemppainen, et al., 2016; Koivumäki, et al., 2017). The aim of the MyData approach is to provide individuals with the practical means to access, obtain, and use datasets containing their personal information. It is a novel approach in personal data management and processing, aiming to transform the current organization-centric system into a human-centered system, and regarding personal data as a resource the individual can access and control (Poikola, et al., 2014). The MyData principles state that personal data should be technically easy to access and use (principle no 1: *usable data*), individuals should have the right and practical means to manage their data and privacy (principle no 2: *human centered services*), and that personal data should be managed in a decentralized way to prevent any data lock-in situations (principle no 3: *open business environment*) (Poikola, et al., 2014).

### **Business models and personal data**

The economic value of a technology remains unclear until it is commercialized in some way via a business model. Moreover, technology should have value for

the individuals, i.e., customers for succeeding. (Chesbrough, 2007). The reason why companies are interested in access to personal data is the potential value that the added information might have for their services (Huhtala, 2018). In fact, many companies that fail to utilize data in their business are risking losing the competitive advantage in the market (Brownlow, et al., 2015). However, data is not a valuable resource for a company or customers, if it is legally inaccessible or cannot be commercialized through a business model. Woerner and Wixom (2015) argue that companies can change their business model by using data, analytics, and algorithms to explore new revenue streams, create or enter new markets, and novel sources of competitive advantage via data monetization and digital transformation.

Data privacy has been a vibrant topic for individual customers and companies for recently. As the worries of the ethical use of data increases, new models and new ways of deriving value from human-centered personal data are sought. Typically companies are using transformation process that is related to the firm ability to change their business models based on the external business environment (Aspara, et al., 2011). *Open business environment*, the third principle of the MyData approach, means that personal data should be managed in a de-centralized way for value to be distributed accordingly. This kind of data sharing from different sectors can be approached with *open business models*. Originally the open business models were used by Chesbrough (2007) when describing value creation in an open innovation context. This is an approach in which an organization draws its ideas from openness such as free software, open source, as well as open content and standards (Frankenberger, et al., 2014). Open business models have been a frequently found concept in literature since 2006 when Chesbrough (2007) published his seminal book on the topic. There is a lack of studies that would focus on business model change and on the evolutionary business model changes (Aspara, et al., 2011). Additionally, there is a lack of consensus in the definition and understanding of the concept, which has led "open business model" to stand for two different kinds of openness. One stream of literature links it to a firm's research and development activities while other researchers understand the open business model more broadly, i.e., not focusing

on R&D activities (Frankenberger, et al., 2014). In this study we understand the open business model in the latter way, broadly.

The aim of this study is to understand the changes in the business model when novel personal data management approach is used as an enabler to gain access to a new resource – personal data. We use the components of the Osterwalder business model canvas to reflect the data-impacted business logic of an occupational healthcare provider through MyData principles. We believe this approach to be fruitful in understanding the effects of personal data usage from a business model change perspective.

## Research Design

Despite its advantages and many examples resulting in sound theories, case studies are a debated methodology, and may require detailed justification as to why case study method has been chosen instead of any other method (Dul & Hak, 2008; Gerring, 2004). The qualitative case study methodology provides the authors the opportunity to explore this single case intensively and describe the studied phenomenon in context using various data sources (Baxter & Jack, 2008; Yin, 2009) with the aim to generalize into wider contexts (Gerring, 2004). This study can be classified as an *instrumental single case study* (Stake, 1995) wherein the case itself is of secondary interest, and the focus is rather on the investigated phenomenon, which in this study are the impacts on the business model due to access to a new driving data resource.

The research process was three staged, containing the following:

1. *The pre-understanding* stage consisted of literature review on business models, selecting the case companies, and planning the research methodology
2. *The data collection* stage wherein goal was to collect primary and secondary data for the case study
3. In *the interpretation* stage theoretical and managerial conclusions are explored

During the first stage, the authors conducted a literature review on business models and personal data to have a deep understanding of the phenomenon. Further,

the authors identified two service providers who were willing to develop personalized preventive healthcare services using MyData principles, and pilot the value of personal data as part of personal wellness services.

In the second stage the authors prepared for the workshops. The use of multiple data sources is a paramount in case study research (Baxter & Jack, 2008). Thus, the primary data was gathered from four recorded and transcribed workshops in which the researchers and the case companies (represented by the two interviewees, respectively) conceptualized future oriented service scenario from a business perspective. In addition, secondary data included several more informal meetings, company information, the case company websites, CEO presentations and articles on the context of occupational and preventive health care.

The authors interviewed 1) the CEO of an occupational health care provider who had a mission to persuade people to start caring for their own wellbeing for the sake of both themselves and their employer, and 2) the CTO of a large business intelligence and enterprise information management solutions provider. Both companies have ambitions in the healthcare and wellbeing business. In this study, the occupational healthcare company will be referred as Health Co., and the business intelligence and enterprise information management solutions provider as Data Co. The two companies have identified a market gap in the healthcare domain in creating a new service that offers an analytical tool for burnout prevention. Both companies jointly explore the hurdles of developing this new service, referred to in this study as the *Wellness Engine*. The service is in its planning stage, without clear understanding what the stakes and roles of each company will be. The case companies agree that the service will initially most likely be a separate, co-owned company. However, both companies identify that a service like this would provide considerable value to all relevant stakeholders.

The purpose of the Wellness Engine is to identify burnout risk factors, and with data, identify the individuals or groups of people with a burnout risk as early as possible to anticipate and intervene before burnout has manifested and fatigue starts to affect their ability to work. Burnout is a unique type of stress syndrome

and is characterized by the loss of mental resources and diminished personal accomplishment (Cordes & Dougherty, 1993; Peeters, et al., 2005). The effectiveness of measures to prevent workforce burnout critically depends on managers' understanding of the burnout phenomenon and of the subtle indications of its emergence (Cordes & Dougherty, 1993). Although the means of preventive health care are in their infancy, they represent a huge business potential. The Wellness Engine is envisioned as a holistic service, in the form of a wellbeing-coaching application which could also provide summaries of employees' overall well-being in the organization anonymously, and help answer what factors make an individual employee, or group of employees, effective and valuable. This study explores the business model from the perspective of the Wellness Engine service.

To limit the effects of a monotonous interpretation, the data collection for this case study consisted of four workshops, in which both interviewees attended, along with researchers from the Digital Health Revolution -research project. However, not all researchers attended in every workshop. The workshop method consisted of several phases, each warranting a dedicated workshop. These phases were i) introduction to personal data, ii) understanding the customer perspective, iii) end-user and business value analysis, as well as iv) technical and regulatory analysis. Both the individual user and the business network are fundamental to the MyData approach; thus, the case was examined through the processes of *personas* (Cooper, 1999) and *customer journey* (Lemon & Verhoef, 2016) to increase the individuals' point-of-view, and through *value network analysis* (Allee, 2008) to gain insight into the business network level. Value network describes agents, typically suppliers and customers, who conduct actual value-creating transactions with the company (Ryall, 2013). The purpose of the first workshop was to increase the case companies' understanding about *MyData* personal data management principles, and the authors' understanding about the plans and ambitions related to the new service they plan to jointly create. In the second workshop, the goal was to identify the key aspects to consider in the proposed service from a customer perspective. In the third workshop the target was to explore the business landscape and value network for the new service

from human-centered personal data management perspective. To gain an in-depth understanding of the case, end users were profiled, potential customers and key roles were identified, and value analysis was done from both end-user and business perspectives. The fourth workshop focused on technical and regulatory analysis in which the goal was to understand what technical and regulatory aspects can hinder the adoption of human centered personal data management principles.

Finally, in the third stage, we explored the research output and extended the literature review based on the results and reached theoretical and managerial conclusions. The analysis process was iterative and abductive, as is often the case in qualitative inquiry, with continuous interaction of empirical data and theory (Dubois & Gadde, 2002). The data set was first thoroughly reviewed and then analyzed using *thematic analysis*, one of the most common techniques in qualitative research (Guest, 2012). In this study, the authors reflected on the convergent aspects of MyData principles and business model components as the theoretical framework. These were approached through a case "Wellness Engine", a potential joint service of the two studied companies. A coding matrix was constructed that enabled the systematic analysis of the data (Robson, 2002), first from the perspective of business model components while reflecting on the MyData principles, both perspectives explored in the continuum of short- and long-term future.

The research process is illustrated in figure 1.

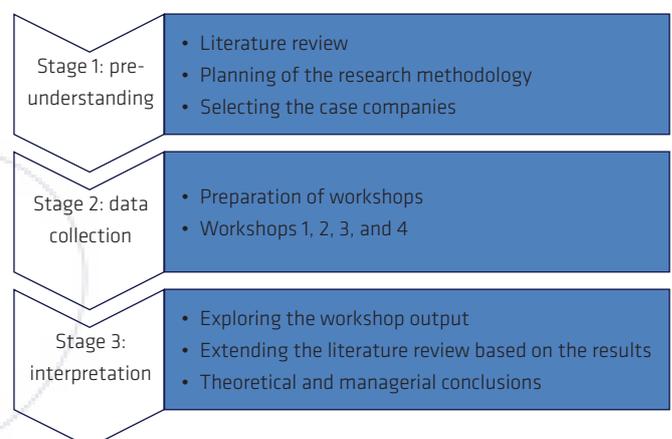


Figure 1: the research process of the study

## Results

In this section, the business model components (Osterwalder & Pigneur, 2010) of the proposed joint service called Wellness Engine are discussed reflecting the MyData approach (Poikola, et al., 2014) from the perspectives of short-term -and long-term future. Table 1 illustrates the structure of the results chapter and summarizes the potential changes to business model components caused by the adoption of MyData approach and access to wide-ranging personal data. However, the table is necessarily a simplification, and as such, it is important to point out that some of the components discussed could be interpreted to fall under more than one MyData principle.

### Usable data

According to MyData approach, personal data should be an important reusable resource that can be easily accessed and used. Companies that can first create and offer services that help individuals manage their lives can create novel business models and boost the economy. However, personal information as such is not easily capitalized. As far as utilization of personal data goes, there are two levels: individual personal data and the aggregated anonymized or pseudonymized data. Before an open business environment has taken hold and data-related regulations are carefully considered, this aggregate-level data is the asset that is worthwhile for industry players. Health Co. and Data Co. plan to use aggregated anonymized data to build the first version of the Wellness Engine data analyzing algorithm. They view personal data as a resource which helps differentiate their service. It is a resource which is not valuable by itself and can thus be shared without losing competitive advantage, and they can use customer data perpetually to improve their value proposition.

The legality in data use depends on the context (Ott Jacques, et al., 2007). Because of data protection regulations especially regarding sensitive medical data, the capabilities to ensure data privacy will be of utmost importance in the plans to utilize individual personal data. This is an aspect that need to be emphasized, because personalization of services - which the use of personal data enables - is one of the most valuable strategic benefits of using data to advance service

(Lim, et al., 2017), and crucially so in the healthcare industry (Hood & Flores, 2012; Ratia, et al., 2018).

Next, the specific business model components related most closely to the *usable data* principle are discussed.

### Key resources

Because of the role of data as an essential resource in preventive healthcare, Health Co.'s and Data Co.'s first goal is to identify the relevant data for the development of the Wellness Engine solution. The main data source on which the Wellness Engine will be built upon is data from Health Co. customers. However, only pseudonymized or anonymized personal data will be collected for developing the algorithm for the Wellness Engine. Sensitive personal information will not be collected at all, because of tight regulations which could hamper the development of the service's data analyzing algorithm.

"We are building it (The Wellness Engine) using the data from healthy people using occupational health care services as reference datasets... (we will not use personal data) ...not in any circumstance, only mass data." -CEO Health Co.

Health Co.'s customer companies could provide added value to the Wellness Engine by agreeing to share data, such as standing and sitting metrics and work time statistics on an aggregated and anonymized level. However, the most valuable data would come from a variety of consented personal data.

"-- (The Wellness Engine) ...can gain more than monetary value if companies could share work time statistics and other such data which is valuable in the development of the model (algorithm). --- If we got data from children, pensioners, and the marginalized citizens, that would really blow up to the pot. -CTO, Data Co.

Data can be used to generate useful information in many ways. Extant studies on using data for services reflect that useful data may come from the service provider (e.g. human resources, work time, etc.) or customers (e.g. activity, behavior), and may be useful to either or both (Lim, et al., 2018). As human-centered personal data management approach become more

	Short-term future			Long-term future			
Mydata principle	Usable data	Human-centered services	Open business environment	Usable data	Human-centered services	Open business environment	Potential changes in Business model components
Business model component							
Key partners	N/A	N/A	Data Co. Statistics, application and measurement device providers	N/A	N/A	Data management companies, Insurance companies, platform operators, private hospitals, decision support system providers, international partners	New key partners
Key activities	N/A	N/A	Service development, ongoing business and regulatory environment analysis	N/A	Activities to improve value proposition by using data to personalize service	Developing interfaces to open business architecture for easy data access and sharing	New activity enabled by personal data as a resource  New activities required to use personal data as a resource:
Key resources	Aggregate-level personal data, activity data	N/A	Domain expertise	All authorized personal data	Data protection (required by regulations) and data storage Data-analysis (from Data Co.)	Domain expertise	Wider source of personal data  New resources required to use personal data
Value proposition	N/A	Occupational preventive healthcare augmented by data-analytics	N/A	N/A	Personalized and meaningful analysis and recommendations on the users' wellbeing based on various data sources	N/A	Improved value proposition
Customer relationships	N/A	N/A	Direct clients in occupational healthcare	N/A	N/A	Insurance companies, decision support system providers, individual users, foreign employer organizations	New customer relationships and roles enabled by open business environment
Channels	N/A	N/A	Customer companies	N/A	N/A	Health care operators, insurance companies	New channels enabled by open business environment
Customer segments	N/A	N/A	Employer organizations as customers	N/A	N/A	Public healthcare, foreign companies	New customer segments
Revenue streams	N/A	N/A	Revenues from selling more services to existing segments	N/A	Using aggregated data to further personalize value proposition or create new value proposition	Selling services to new customer segments	New sources of revenues  New services enabled by personal data as a resource

**Table 1: Impacts of human-centered personal data management (here MyData) principles on business model components on short and long-term.**

widely accepted and adopted in the business environment, the integration of data becomes considerably easier. In the long run, authorized personal data from all relevant actors of the network are considered the driving resource for business.

“---the MyData concept is a big thing here: (public data) it's public and in some sense a very open system, and if people would go for this and give their information. --- It's a great vision and socially impactful.” -CEO, Data Co.

### Human centered services

The second MyData principle has to do with the role of the human customer in services. According to Poikola et al., (2014) individuals should be empowered to have the right and means to manage their own data and privacy. The case companies are researching into how users could manage their own data. From the individual perspective, the aggregation and sharing of large amounts of personal data for the use of companies can raise anxiety. A common fear rising out of such data collection is whether the quality of data security is sufficiently robust, in addition to the fear of misuse of personal data (Weber, 2015). The companies are exploring the possibilities of linking their service to the Finnish national health and wellness database Omakanta. Managing data storage and data protection with an external partner is a valid option, allowing focus on core competencies (Huhtala, 2018).

In the following, specific business model components most closely relating to the *human-centered services* principle are discussed.

#### Key activities

A widespread adoption of the MyData approach would open data sharing between Health Co. and Data Co. and third players, enabling human-centered services. It would be possible to use different types of information - such as the customer data accumulated by retail chains, banks and biobanks - to give more comprehensive and holistic guidelines and advice. Other organizations could contribute in the development of Wellness Engine by, for example, providing work time- and other kinds of statistics. Early development of MyData architecture could offer a strategic benefit in the form of differentiation from their competitors for a short amount

of time. The open business environment made possible by the MyData architecture will enable Health Co. and Data Co. to get access to a wider base of various data sets that enables the creation of new breakthrough service innovations before anyone else in the market. Essentially, there will be new activities enabled by personal data as a resource and new activities required to use personal data as a resource.

#### Key resources

When the Wellness Engine service can process and analyze individual personal data, there will also be a need for the capability to protect, anonymize or pseudonymize aggregated data, so no one can make any personal conclusions based on it. This need is driven by the legal and regulatory considerations regarding personal data in both national-, EU-, and global level. In summary, there will be change towards wider sources of personal data and new resources required to use personal data.

#### Value propositions

The short-term value proposition offered by Health Co. and Data Co. is a burn-out tracker service for working age population and an analytics machine that summarizes the data and then returns it back to the individual, but also to the company management and occupational healthcare players when needed. The long-term value proposition for the Wellness Engine service is personalized and meaningful analysis and recommendations on the users' wellbeing based on various data sources for occupational healthcare. The idea is that soon Health Co. could offer tools that can provide a big picture of the wellbeing of the workforce based on aggregated personal data.

“...we can offer sophisticated tools and aggregated status information for HR management. --- I think it would be really useful if we could view a sales organization and its relevant energy levels: we could explore the levels of sleep, activity, and at what days the sales manager is most energetic, and if those pieces of information correlate. --- These are the kinds of information I'd love to see. -CEO, Health Co.

When there is a high burnout risk, the system will raise a red flag and provide guidelines for the person to slow down. When there are several red flags in the same

team or the same organization, the management will get information about it and some guidelines on how to improve the wellbeing of their employees in the workplace. If there are many red flags related to the same person, the information will be sent to the occupational healthcare provider that will then discreetly suggest to the person in question a visit to the doctor. With the Wellness Engine, Health Co. can offer their individual customers more efficient care based on continuous data analysis. In practice, employer organizations sign a contract with a service provider (i.e. Health Co.), and the management level of the employer organizations can use the analyzed data as basis for decision-making. There is also a possibility that decision support via the Wellness Engine could be offered to companies that are not direct customers of Health Co.

...Health Co. offers them (customers) occupational healthcare services, and the data analyses are included, but the Wellness Engine service can be sold to any company as a tool. The services can be sold directly to companies.” –CEO, Health Co.

From the MyData point of view, it is important to consider what happens to the employee’s data after they resign or retire. According to MyData approach, the individuals should be able to take their own data with them without fear of a data lock-in. As part of the value proposition, the data could be stored against a fee, or upon request, the individual could be entitled to receive their respective raw data file.

“We don’t have a solution for this currently. It could be that if there won’t be any public database in which to preserve that (personal data), then it could be a paid service. So that we’ll preserve the individual’s data, but it’d cost some small amount. –CTO, Data Co.

Finland has recently opened a national personal health record *Omakanta* where people have basic tools to manage their respective wellness-related data. *Omakanta* works in tandem with another database, *Kanta*, which contains sensitive medical data for professional use. (Kansaneläkelaitos, 2019). At the time of our case study, the case companies were investigating the Finnish national personal health record and occupational healthcare links. All in all, the improved value

propositions were expected to follow between the network actors from adopting MyData approach.

### **Open business environment**

The third MyData principle addresses the business environment. A widespread adoption of MyData approach leads to an open business environment, which enables “decentralized management of personal data, improves interoperability, makes it easier for companies to comply with tightening data protection regulations, and allows individuals to change service providers without proprietary data lock-ins” (Poikola, et al., 2014). In this study, most changes we identified in business model components, originate from the domain of the third MyData approach: open business environment. This insinuates that the role of the network, or the service ecosystem (see e.g. Vargo and Lusch, 2004; 2008), is increasingly important in the data-saturated modern world.

Health Co. has activity trackers partners etc. and has partnered with Data Co. do co-develop the Wellness Engine service. In the long run, collaboration with other stakeholders is sought for with the aim of gaining access to, for example, consented public health data and data from other private service providers, as well as the individual customers. However, many obstacles are in the way. Data protection regulations enforces strict codes of conduct for the use of personal data, but it also provides a common and predictable framework in which to operate. This alone is not enough for a truly open business environment and requires a systematic adoption open business models for all stakeholders in the business network. This, in turn, requires that the benefits of doing so trumps the costs related to it.

Next, specific business model components relating most closely to the *open business environment* principle are explored.

### **Key partners**

Health Co. has an external health and activity data aggregation service, which they use primarily to offer their customers a simple solution to accumulate activity, sleep, pain, and nutrition data. In this service, a person can identify and select the subset of relevant metrics to be tracked. The sleep information comes via activity-trackers, authorized through user interface. Sleep duration and depth, and daily

activity, or steps are the most important datasets for the functionality of the Wellness Engine. Health Co. has an ongoing collaboration with the employer organization, and permission to collect the specified personal data from individuals it is providing its service for. However, if the used data is collected from other players in the business network, the individual's consent is required. Further, if Health Co. wants to offer the data to a third party, it must have the individual's consent and it needs to clearly indicate these purposes in its service terms. Health Co. can already get consented information about the people's status through their activity and sleep data aggregation service partner. The possibilities to acquire data for service development are vast, and it is conceivable that the Wellness Engine service could be co-created in collaboration with several other actors in their business network.

“When it becomes clear what data we want in the near future, and when the business case is confirmed and validated, it's not out-of-the-question that other companies might be involved in the joint service in one way or another, considering they bring in some distinct added value.” CTO, Data Co.

Current key partners in the Health Co. value network are companies that work on time statistics as well as other identified application and measurement device providers. Toward the future, it is important to search for new partners that enable the information flow between the services, like data management organizations, and other companies with relevant data, such as insurance companies, platform operators, private hospitals, decision support system providers, and international partners. Because of the varying nature of the occupational healthcare field in different countries, Nordic cooperation is considered important to model where the possibilities and problems are, and to see where pseudonymized data, data authorization, etc. fits into the business of both Health Co. The collaboration with public sector will happen later in the anticipated life cycle of Wellness Engine, when the open data business environment makes it possible for third parties to send and receive relevant data.

Data Co. is an essential partner in developing the Wellness Engine service as the source of expertise on

developing the data analyzing algorithm. It is widely acknowledged that analytics can create new business opportunities and disrupt all industries (Ratia, et al., 2018; Woerner & Wixom, 2015). When reflecting this partnership through the open innovation research, Health Co. is innovating its business model with a *co-development partnership* (Chesbrough & Schwartz, 2007). Chesbrough and Schwartz (2007) argue that co-development partnerships are an increasingly potent way of developing the business model to improve innovation effectiveness.

#### Key activities

Initial key activities and processes in the business plan of Health Co. and Data Co. is to co-develop the first version of the Wellness Engine service, and make sure it will be legally sustainable regarding the use of personal data. Later, the role of open business architecture development for easy data access and sharing will be an increasingly topical activity.

“So, our first case now is to build that burn out -indicator...Overall, it (regulatory analysis) would be pretty useful for us, so we won't build anything that's not legally possible.” -CEO, Health Co.

Analytics processes will be essential to transform data into useful information for customers (George, et al., 2014). When the algorithm is ready, the Wellness Engine will need personal data from the users for testing. At first, the target is to get anonymized data, e.g., electronic health checks and an occupational health satisfaction survey on a monthly or so basis. Often people may give answers more honestly to an external occupational healthcare provider than to their employer organizations. However, Health Co. does not have direct access to the customer organization's employee data but can receive raw data upon consent.

#### Key resources

At the first phase, the key resources relating to open business environment are the customer contacts and preventive health care expertise of Health Co. and technical expertise coming from Data Co. In the long run, the resource base will widen as new data sources will become available. The respective domain expertise of the case companies remain important.

### Customer relationships, customer segments, and channels

The aim of the case companies is to create a preventive occupational healthcare service solution, wherein data analytics and available personal data enables the services which can be sold to both public and private sectors, such as pension insurance companies and other public and private healthcare players and work organizations. Insurance companies will also become important channels in the future open business environment because they can offer personalized ways to motivate people to improve their daily lifestyle, offering more competitive insurance fees in exchange for healthier habits. In addition, pension insurance companies are important stakeholders even now, as they subsidize the cost of occupational healthcare services for companies. However, the current business model in *preventive* occupational healthcare is troublesome, because the regulations regarding preventive healthcare hinders its development. For example, the Finnish occupational healthcare laws date back to the 1970s; although the Finnish Centre for Pensions now subsidizes for occupational health e-services, it will not compensate for *preventive* occupational healthcare. This brings challenges in the current business model of Health Co.

“Insurance companies and pension insurance companies pay directly to the companies for the services our customer organizations buy from us. That’s how the money flows. --- I would like for the companies to pay (for our services) without subsidies. I think we have like a dozen clarifications going on with the Finnish Centre for Pensions regarding our client companies’ subsidies...”  
-CEO, Health Co.

One possible option to sell the Wellness Engine solution is approaching the employer organizations abroad. It is a tempting direction of growth because, for example in Germany, the business models in occupational health care are different than in Finland: insurance companies could become direct clients of occupational healthcare services.

“If we would go to German markets, there these insurance companies are the direct customers (of occupational health care), so it’s a whole other business model.” -CEO, Health Co.

Potentially, open business environment would enable new customer relationships and roles, new channels and consequently new customer segments.

### Revenue streams

The motivation to utilize personal data is widely accepted and the benefits are immense especially in the healthcare sector (Hood & Flores, 2012; Beirão, et al., 2017; Ratia, et al., 2018). Chesbrough (2007) argues that technologies and data can be commercialized in many ways, which leads to many types of business value. The value of the Wellness Engine service, for example, means different business value for each of the respective case companies.

In the business landscape of the future, in which the data flow will be continuous with the consent of individuals, new types of revenue fees from different players will be important to analyze. Initially, the target is to get service fees through direct occupational healthcare service contracts, mainly with work organizations and state enterprises. In the long run, the customer potential is predicted to be in the multi-sided platforms of the personal data -utilizing actors. The value potential of the Wellness Engine will increase when there will be more end users, and thus, more data sources. When the Wellness Engine is completed, it could be licensed as a service for other companies’ use, generating even more anonymized raw data, which would make analyses more accurate and valuable. Aside from employer organizations and the Finnish Centre for Pensions, the planned revenue for the Wellness Engine would come from subscription fees or service payments from individual users and private companies. For Data Co., being the other developer of the Wellness Engine, it is imperative to discover additional business to be made aside from a steady revenue stream via Health Co.

“---if you think about Data Co.’s interests, Health Co. is a rather small actor. So, if we are to build this Wellness Engine together, I must think about finding additional business benefits, aside from Health Co. paying for the use of Wellness Engine for services. -CTO, Data Co.

“In fact, Health Co. customers’ fees are Health Co. revenues, but the algorithms and analyzing services of the Wellness Engine can be used by other

organizations aside from Health Co. customer organizations.” -CEO, Health Co.

Of the business model components specifically for revenue streams, potential changes appearing would be new sources of revenues and new services enabled by personal data as a resource.

## Discussion and conclusions

The purpose of this study was to explore the potential changes in the business model caused by adopting the MyData approach to gain human-centered personal data as a resource. The results revealed from our analysis are summarized in table 1. The contributions of our paper are two-fold. First: we are contributing to service science (see e.g. Spohrer and Maglio, 2008; Vargo and Lusch, 2004; Lim, et al., 2017) by discovering and describing the increasingly vital role of the business network, or ecosystem, in using and sharing data. Secondly: to the research on open business models, by providing an analysis on the changes the companies articulate in an open business environment (Wirtz, et al., 2016; Chesbrough, 2006; Voelpel, et al., 2004).

Perhaps the most prominent underlying reason for most changes in the business model components is the importance of the role of the business network, or ecosystem, in the future. This seems to accentuate the convergence of different industries, since in this business network, the healthcare industry, insurance industry and ICT are becoming increasingly involved, each providing valuable data to each other with the consent of the individual, in the hopes of creating mutual value.

The human-centered personal data management approach is seen as an enabler to create value from various and different sources of data. More importantly, the adoption of MyData approach may help companies comply with regulations and gain new business opportunities via new resources. However, data alone does not bring any value if it is not integrated with customer value through the business model. Further still, our study suggests that open business models may be helpful in capturing that value by making it possible to attain resources that are otherwise unavailable. Using open source software and data (open business model) and exercising business model in action by presenting

the business model to various stakeholders to maximize network-level understanding of the business logic can result in the highest potential value for different stakeholders (Saebi & Foss, 2015).

The earlier discussed industry convergence encourages open business models through technology convergence and through the power of new market entrants, requiring wider business model adjustments. Thus, open business models can be used to understand the business opportunities the companies and their business network actors can gain over time by accessing personal data from different sectors. We found that a co-development partnership (Chesbrough & Schwartz, 2007) can be an essential building block in a business model because the partnership may provide crucial resources required to utilize personal data: data analysis and management.

The aim of business models is to exploit a business opportunity by creating value for parties involved. The re-evaluation of the business model enables the companies and managers to reimagine the limits and potential of data as a resource in their value creation. This is in line with Amit and Han (2017) who argue that digitalization expands the resources that the companies can use in value creation.

Our study shows that the use of data as a resource might help involved companies to build value propositions that enable differentiation in their business models. Particularly, the results indicate that rich data from different sectors will open new opportunities for companies to create more personalized value propositions. In addition, our study posits that “data begets data”, meaning that personal data used to provide useful information to the customer via data analysis may produce more available data to use further in data analysis, or in further refining value proposition. These data may come from various stakeholders and may benefit all respectively. Some authors (Casadesus-Masarell & Ricart, 2010) argue that business models are a set of relations and feedback loops between variables and their consequences, and it is in developing these cycles managers need to focus on. The capability that enables integration of business model among network actors is the ability of the company to establish new technologies as a basis for the innovation. This is a way

for the company to attract other companies in the service network to invest resources to the common service creation (Chesbrough, 2007).

An extensive research is still needed to explore the success factors and barriers of using data to advance service, and the logic of business must be clarified. In addition to adopting the notion of open business models for better data accessibility, companies need to consider the legal and regulatory framework. In fact, from the managerial viewpoint, a crucial issue is the extent in which the two of the company managers can take responsibility of the practical actions required for reacting to the impacts to the business model. The main challenge is that the accessibility and sharing of personal data is mainly dependent of the actions and decisions made by policy makers. As such, institutional collaboration and influencing are important: there are legacy regulations regarding occupational healthcare in Finland which hamper the business logic of occupation healthcare services, such as the fact that the Finnish centre for pensions does not compensate for preventive occupational healthcare.

The study's methodical strength is in detailed recorded discussions that were done together with the case companies. Nonetheless, this single case study is relying on a limited amount of data that was used to explore

the potential changes in the business model caused by adopting a human-centered personal data management approach. It is argued that business models cannot be fully anticipated and that they are eventually learned over time through experimentation and trial-and-error learning (McGrath, 2010; Sosna, et al., 2010), much like the way *business model in action* is described to act. While it is inconceivable to anticipate everything regarding the changes in the business model in a rapidly changing technological context, our scenario-driven methodology is rationalistic in its exploration of "optimal" or evolutionary" strategy (Van der Heijden, 2005). Further research, including data from different sectors, e.g., the financial sector, and research focused on the value creation aspect of using data to advance service could strengthen the constructs that have been empirically fleshed out by using the case study.

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# Value Creation in Business Models is Based on Intellectual Capital – and Only Intellectual Capital!

Henrik Dane-Nielsen<sup>1</sup> and Christian Nielsen<sup>2</sup>

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## Abstract

This chapter applies the lens of emergentism and emergent properties to the understanding of value propositions, value creation, value delivery and value realization. It argues that none of the building blocks typically asserted with business models are of any value without the underlying intellectual capital to apply them and furthers this understanding through a series of case examples. This chapter enhances our understanding of the role of intellectual capital in the value creation of business models and argues that intellectual capital is the foundation of business models.

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Keywords: Business models, intellectual capital, levels of organisation, emergent properties, theory building

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## Introduction

This chapter offers a novel perspective on how intellectual capital can be applied to the notions of business models. Our understanding of business models is that intellectual capital, present in different forms at all levels of organisation as described by Nielsen and Dane-Nielsen (2010) and are the only real value drivers of any type of business model. A business model is thereby a description of how intellectual capital is used in the organisation to create value.

Nielsen (2011, p. 26) asserts that “A business model driven by intellectual capital may in some ways differ from business models driven primarily by other factors, such as financial capital or natural resources. When intellectual capital drives the business model of a company then competitive advantage may be particularly high, margins high and corporate flexibility good”. Knowledge and intellectual capital are important for the creation of value in the knowledge-based. However, in this chapter we argue that any type of technological development through the ages has had intellectual capital at its core, right from the invention of the plow, gunpowder, steam engines and through to computers. In fact, any type of business or service is driven by the knowledge of how to do things. This is essentially because economic activities are driven by intellectual capital, and thereby we disagree with the arguments posed by Nielsen (2011) above.

One of the reasons for this is that business models are concerned with delivering a value proposition to users and/or customers, but the value proposition and the resources to back it up never stand alone because they need to be supported by other activities. The problem with contemporary frameworks for visualizing companies' business models is that they often take the form of generic organisation diagrams illustrating the process of transforming inputs to outputs in a chain-like fashion. A good example of this is found in the Integrated Reporting framework (IIRC, 2013) as well as in more management-oriented models such as the Business Model Canvas (Osterwalder and Pigneur, 2010). The core of the business model description should be focused on the connections between the different activities being performed in the company, in a reporting context often found as separated elements in the companies' reports. Companies often report a lot of non-financial information (e.g. customer relations, distribution channels,

employee competencies, knowledge sharing, innovation and risks) but this information may seem unimportant if the company fails to show how the various elements of the value creation collaborate and changes.

This is where the intellectual capital perspective becomes imperative. Current perceptions of relationships and linkages often reflect only tangible transactions (i.e. the flow of products, services or money). However, in analyzing the value transactions inside organisations (intra-organisational) and between an organisation and its partners (inter-organisational), there is a tendency to forget the often-parallel intangible transactions and interrelations that are appended (cf. Montemari and Nielsen, 2013). Our hypothesis is therefore, that no organisation, regardless of the type of business model being leveraged, can function without the appropriate intellectual capital to make use of machinery, increase financial capital, conduct processes, management actions, etc. An organisation's value drivers are always their intellectual capital.

The remainder of this chapter is structured as follows: In section 2 we introduce the field of business models and the role of value drivers. For this purpose, we focus on the level of business model configurations as explained by Taran *et al.* (2016) and Nielsen *et al.* (2017). Next we discuss intellectual capital and the relationship to value drivers by discussing how intellectual capital differs across varying levels of organisation using the framework developed by Nielsen and Dane-Nielsen (2010). In the section 4, the notions of intellectual capital value drivers in business model configurations are illustrated using five examples. Finally, the chapter is concluded and future research paths are provided. It is argued that the inherent difficulties of understanding the interdependencies of business models across companies as well as different levels of organisation can be traced to a lack of understanding of the differences between synergetic effects, causal relationships and emergent properties.

## Business Models and Configuring Value

The concept of the *Business Model* offers a novel perspective from which to understand how companies become profitable, efficient, competitive and sustainable: the

latter being interpreted as the ability to survive in the long-term. Much current focus in the field of business models concerns definitions, delimitations and constructing frameworks for analysing business models (Wirtz *et al.*, 2016a) or innovating them (Wirtz *et al.*, 2016b; Foss and Saebi, 2016). Despite lacking unified theoretical groundings, at least according to Zott *et al.* (2011), many of these frameworks, ontologies or models, have proven to be successful in business and entrepreneurship practices. The most notable example of this is the Business Model Canvas published in Osterwalder and Pigneur's 2010 book, *Business Model Generation*, which has sold over 1.200.000 copies to date and been translated into over 30 languages. In its wake, there are several other tools and frameworks that perform additional and complementary analyses to that of the Business Model Canvas, like for example the Value Proposition Canvas (Osterwalder *et al.*, 2014) and the Kickass Company concept (Brøndum *et al.*, 2015; Nielsen *et al.*, 2016).

For a given company, it is important to be aware of the business model being applied for two reasons: 1) First, the business model is the platform for executing corporate strategy. Therefore, if the business model is poorly configured or implemented, then the company will have difficulties in carrying through the strategy and ultimately then also meeting the non-financial and financial targets. 2) Second, the business model affects the managerial processes of the organisation because it directs the focus of how the firm does business. If the business model of a given firm relies on close ties with customers and the continuous involvement of strategic partners, then the managerial focus is expected to differ drastically from a situation where all customer interaction is web-based and all functions are in-house. In a similar manner, Mintzberg and van der Heyden (1999) argued that different forms of organisation, or value configurations, carry different managerial foci, because the basis of value creation is different.

### **Positioning the business model**

Baden-Fuller and Morgan (2010) argue that business models are distinct ways of doing business that can be distinguished from alternative modes of doing business and furthermore can be classified by the nature of how they are configured. In so speaking, Baden-Fuller and Morgan (2010) argue that a business model may be described as a model of how the firm does business.

Sometimes the naming of the specific business model is done through the example of a well-known company. Five good examples of this are the eBay business model, the Dell business model, the Ryanair business model, the Gillette business model and the Skype business model. However, as Baden-Fuller and Morgan (2010, p. 157) note, behind most specific business model examples, the role models, there are scale models that "offer representations or short-hand descriptions of things that are in the world, while role models offer ideal cases to be admired". The above examples would be the *E-auction* business model configuration (eBay), the *Disintermediation* business model configuration (Dell), the *No-Frills* business model configuration (Ryanair), the Razors and blades business model configuration (Gillette) and the Freemium business model configuration (Skype). A commonly applied business model definition that captures these notions of configuring a business is Osterwalder and Pigneur's: "A business model describes the rationale of how an organisation creates, delivers, and captures value" (2010). In section 4 below, we apply these five cases to illustrate that intellectual capital is the key value driver of the value creation of a business model.

### **Notions of value**

The notion of value is important, because *value creation* is at the heart of understanding business models and this concept seems to introduce a new level of analysis, different from, but related to strategy, organisation and management. Akin to tribalism, there are many opposing views on what the term "value" signifies. In accounting the debate between cash-based and accruals-based accounting exists and in strategy there is the debate between Porter's (1985) market-based view and Barney's (1986) resource-based view. Another problem is that *value* is used as a catch-all term focused on value for the consumer and wealth for the organisation, which might be problematic. Typically, *value* is treated as an outcome of business activity (Conner, 1991) and furthermore, Sirmon *et al.* (2007) argue that there is minimal theory explaining 'how' managers/firms transform resources to create value. Hence value is not only poorly defined but also poorly theorized.

A way of resolving this confusion is to distinguish between "*use value*" and "*exchange value*". *Use value* is the benefit received from resources and capabilities

and *exchange value* is the money that changes hands when resources, products, or services are traded (Bowman & Ambrosini, 2000). Figure 1 below conceptualizes the relationships between concepts of value according to whether they are related to strategy, activities or the stakeholders affected by the organisation. Central to the business model literature is the term *value proposition*, which expresses the characteristics of the offering which the customer favours; hence it has close resemblance to the term *use value* applied in resource-based theory. The value proposition is an expression of uniqueness and differentiation of a product or service.

Another important value concept in the field of business models, is that of *“value creation”*. From a business model perspective, value creation expresses the business activities being performed and is closely related to and understanding of value-added (i.e. what extra value does the product/service have when it appears from the production process). An alternative way of understanding value creation is as cash flows, which are the ultimate liquidity (cash-based) effects of activities performed. Cash flows may differ despite identical activities due to the company’s position and strength in the value chain. However, it can be argued that higher cash flows are a proxy of the strength and resilience of the business model. Beyond value creation comes the actual physical interaction between the company and its customers in the form of the delivery of value. Here the packaging of the product is the subject of analysis. This relates not only to the delivery channel, but also to the combination of product, service, knowledge and financing included in the delivery.

The notion of *“value realization”* refers to the effects of physical and monetary transactions between the company and its customers. Through transactions, the company’s activities are transformed into cash and from

this converted into profits or losses depending on the company’s ability to manage its activities and finances. From the business model perspective value realization is merely an element of the mode of competition. As such value realization leads to value outputs, which are the effects on the total value of the company, in terms of the balance sheet and market value. There is an important distinction between shareholder value and value to the customer. The IIRC (2013) introduced the idea of *“value outcomes”* to represent a broader notion of corporate effects e.g. on the total set of stakeholders and also the way the company affects users, customers, partners and networks and vice versa. From this categorisation of value, we can distinguish between different types of value drivers and thereby also gain a better understanding of different types of value drivers in relation to the business model.

**The value drivers of business models**

An important question to ask is: How do companies create value? In this chapter, we argue in both for-profit and not for-profit organisations, it is only intellectual capital, for example in the form of knowledge of how to use resources that drive value creation. The resources themselves create nothing. The notion of value drivers has been applied in a series of related fields to that of intellectual capital (e.g. Marr *et al.*, 2004; Cuganesan, 2005; Carlucci and Schiuma, 2007), such as R&D (Pike *et al.* 2005), and customer relationship management (Richards and Jones, 2008). A business model is a description of an organisation’s value drivers as a whole.

Here, a *value driver* refers to any factor that enhances the total value created by an organisation (Montemari and Nielsen, 2013), which is, in turn, the value that can be delivered to the actors involved in the business model (Amit and Zott, 2001). Value has different

STRATEGY	Value Proposition (The Business Model)			
STREAM	Value Creation (Business activities)	Value Delivery (The packaging)	Value Realization (The transaction)	Value Outputs (Economic effects)
STAKEHOLDERS	Value Outcomes (Relationships with society and capital providers)			

**Figure 1: Conceptualizations of value**

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Ease of use Quality Accessibility	Knowledge of competitors' products (HC and CC) Knowledge of customer needs (HC) Logistics planning and distribution network (SC)
Value Segment	Packaging Distribution Communication Customer loyalty Lock-in	Knowledge of market behaviour, consumer needs and wants (CC) Knowledge of sales-triggers and buyer behaviour (HC and CC)
Value Configuration	Material assets Immaterial assets Branding Processes IT-systems	Human Resources / recruiting staff (HC) Purchasing / the quality of raw materials (HC) Manufacturing / building design, machinery, equipment, instruments (SC) Logistics / the economy of storage (SC) Technical solutions / technology (SC)
Value Network	Partnerships Contracts	Stakeholders / surrounding society (SC)
Value Capture	Financial capital Revenue models	Finance / shareholders (SC)

**Table 1: Value dimensions, value drivers and intellectual capital**

characteristics and can be split into several sub-dimensions (Amit and Zott, 2001; Ulaga, 2003; Cuganesan, 2005). One way of categorizing different perceptions of value and linking this to value drivers is provided by Nielsen *et al.* (2017). Their study identifies 251 different value drivers and categorizes them according to Taran *et al.*'s (2016) five-dimensional framework: Value Proposition, Value Segment, Value Configuration, Value Network, and Value Capture.

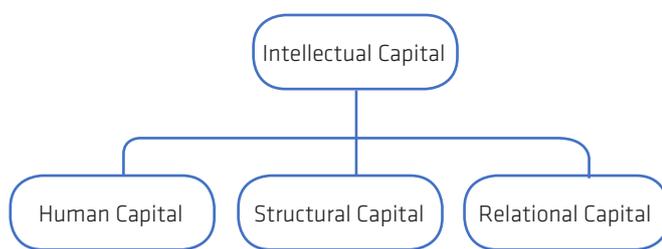
Table 1 illustrates how intellectual capital can be related to the different types of value drivers of business models according to Taran *et al.*'s (2016) five-dimensional framework. According to Nielsen *et al.* (2017), business models are representations of internal value drivers, the intellectual capital in the organisation, and external value drivers, including relations to external partners. These are often interlinked, take for example the handling of external relationships, which is an important internal activity for many companies. Intellectual capital can be in the form of relevant knowledge held by individuals employed in the organisation or knowledge acquired from outside the organisation for a specific functional purpose. Take for example the value dimension "Value Proposition" above, where "Accessibility"

is a value driver. Behind the value driver "Accessibility" is knowledge about the customer's preferred mechanisms of buying and receiving the company's products, as well as logistics planning. But in addition to this, also externally acquired knowledge relating to setting up the distribution platform. In many cases, companies have strategic partners running their distribution networks, and hence intellectual capital relating coordination with distribution partners also becomes relevant.

## Intellectual Capital and Value Creation Measures

The typical break-down of intellectual capital follows Edvinsson and Malone's (1997) IC-tree that divide intellectual capital into human capital, structural capital and relational capital. Together with Edvinsson's (1997) Skandia Navigator this proposed disaggregation of intellectual capital can be perceived as standard method of categorizing intellectual capital (cf. Sveiby, 1997; Stewart, 1997; Meritum 2002). Human capital is viewed as everything the company cannot own, and structural capital is defined as: "...everything left at the office when the employees go home ...Unlike human

capital, structural capital can be owned and thereby traded” (Edvinsson and Malone 1997, p. 11). Ultimately the creation of value comes from activities being performed by the company. All activities in an organisation and all activities outside the organisation involving inputs and outputs to and from the organisation can be characterised as being economic activities and all of these activities are controlled by structural intellectual capital in one form or another. Lastly, is the category of relational capital which concerns the value imbedded in supplier relations, customer relations and strategic partnerships. Figure 2 below illustrates the three subclasses of intellectual capital most commonly applied.



**Figure 2: The three generic classes of intellectual capital (adapted from Edvinsson and Malone, 1997)**

Nielsen and Dane-Nielsen (2010) critique this type of disaggregation, arguing that the summing up between subclasses in an accounting-like fashion completely ignores the fact that intellectual capital has different characteristics according to the levels of organisation at which they are present. In similar fashion, Mouritsen and Larsen (2005) argue that it is the entanglement of the depicted subclasses of IC that create value and not the subclasses by themselves. The mechanism by which intellectual capital is enacted is through the organisation of activities, in a business model, in which the knowledge of the individual is utilized. This leads to propose that the value drivers in an organisation always are intellectual capital, and nothing else, because all economic activities are controlled by people who, ideally, have the necessary knowledge in order to manage or perform the activities.

### **Intellectual capital properties at different levels of organisation**

We use the notion of emergentism (Emmeche *et al.*, 1999) in the description of intellectual capital at the different levels of organisation. Leaning on this, intellectual capital is represented throughout the

organisation by *emergent entities* as *emergent properties* (Nielsen and Dane-Nielsen, 2010) at different levels in the organisation. Here, emergent entities are the carriers of the properties that create value and the properties of intellectual capital differ across levels of organisation (Nielsen and Dane-Nielsen, 2010), both when a property has relations to a higher or a lower level of organisation. In moving between different levels organisation, completely different sets of properties emerge; in turn also affecting the units these are measured in (Wilson, 2010).

All activities relevant for the organisation are performed in *functions* with relations to other activities organised by the specific organisational structure, with emergent levels (Seibt, 2009). The propensity to form an emergent structure is, metaphorically speaking, the DNA of organisation. Within the notion of Mereology, which is concerned with the study of parts and wholes, we find the notion of *emergentism* (Stephan, 2010) which originates from sociology (Sawyer, 2010) and biology (Potochnik, 2010; Kim, 1999), where scholars describe how natural phenomena in nature and social communities among people and animals result from a dominating hierarchical structure in nature (Rueger and McGivern, 2010).

It is important to emphasize that new emergent phenomena result in new entities (Emmeche *et al.*, 1999) which are carriers of new emergent properties on a different form. For example, knowledge of the individual employees in different functional departments can work together to form structural capital in the form of processes and technologies containing data about products, customers or markets. This notion of intellectual capital having different properties at different levels of organisation (Nielsen and Dane-Nielsen, 2010) is equivalent to the relationship between the role of organ systems in an organism, as described within the field of medicine (Potochnik, 2010). Hence, emergentism brings order to a field of random disorder (Rueger and McGivern, 2010), because disconnected components are ordered in a hierarchical system with functional levels.

We identify four levels of organisation in order to discuss the value of intellectual capital. The first level is the individual level, where individual knowledge is expressed. The second level, namely the group level,

also known as functional departments, individuals are employed to perform tasks and here knowledge is a part of the functions and activities performed. The third level is the organisational level which consists of a number of functional departments. The output from the organisation is products or services. Intellectual capital at the organisational level is embedded in the products and services. The fourth level, is the market level and there are two markets. There is the market for products and services and then there is the market for companies, e.g. the share market (the share value of the organisation include the value of Intellectual Capital within the company).

Activities create value for the organisation and activities at all different levels in the organisation are driven by the knowledge of how to do things. It is not the stock of raw materials that create value. It is not the machinery, which create value in the organisation. It is the knowledge of how to use the machinery and sophisticated equipment and how to make use of the raw materials that is creating value. The stock of raw materials has no value in the warehouse as long it just sits there. Only when used in the production of items, raw materials or components, does the stock of materials become a means for value creation. Same goes for buildings, financing, machinery, equipment, and prepared marketing materials etc. These capitals are worth nothing without the knowledge of how to utilize them. Intellectual capital used in activities is the driving force behind value creation and knowledge of the organisation's products and service is necessary for this value creation.

Customers do not create organisational value *per se*. Rather, it is the knowledge of the customers, their wishes

and requirements and the knowledge of how to sell, which ultimately creates value. Long-term contracts with customers also carry value. However, behind the contracts lies knowledge of the market, knowledge of laws and regulations etc. Thus, intellectual capital creates value when applied in activities in the organisation itself and in the transactions with other organisations. In this sense, value drivers can be seen as effects of the application of intellectual capital in concrete activities. These activities can take place on different levels of organisation in accordance with the specific relevant functional departments and they will result in emergent effects.

**Next step performance measures**

Mouritsen *et al.* (2003b) propose a model to analyze the interrelations of intellectual capital across two dimensions. The first is the type of intellectual capital and the second is whether the intellectual capital concerns resources, activities or effects. Together with an understanding of the organisation's strategy and the key management challenges facing the executive management, this model makes it possible to mobilize a series of questions to identify the key intellectual capital indicators. Evaluating the effects of intellectual capital can therefore be done in a series of steps.

First step is evaluating the identified indicators in a scorecard-like fashion in relation to a set of expected targets for each indicator. In a second step, the indicators can be evaluated in the analysis model (Mouritsen *et al.* 2003b) presented below in Figure 3 by asking which indicators affect each other. Third, the analysis can be completed by asking whether some of the 12 boxes have missing indicators. Finally, with the indicators at hand, management should ask themselves how

Evaluation criteria Knowledge resources	Effects	Activities	Resources
	What happens	What is done	What is created
Employees	• • •	• • •	• • •
Customers	• • •	• • •	• • •
Processes	• • •	• • •	• • •
Technologies	• • •	• • •	• • •

Figure 3: The analytical model (Mouritsen *et al.*, 2003b)

they fit into the story of what the company does and how it is unique. In this manner, management is gradually moving closer to understanding the effects of intellectual capital on the value creation of the organisation. In order to assess if the composition, structure and use of the company resources are appropriate, it is necessary to consider the development of the indicators over time, and finally the company may pursue relative and absolute measures for benchmarking across time and across competitors.

Unlike an accounting system, the analysis model is *not* an input/output-model. There is no perception that any causal links between actions exist to develop employees and the effect in that area (e.g. increased employee satisfaction). The effect of such an action may appear as a customer effect. The employee becomes more qualified and capable of serving the customers better. The task of the analysis is thus to explain these 'many-to-many relations' in the model. The classification itself does not explain the relations, just as increased expenses for R&D alone do not lead to increased turnover in the financial accounting system.

It is essential to support a company's business model story with performance measures. While it may be acceptable for some companies merely to state that one's business model is based on mobilizing customer feedback in the innovation process, excellence would be achieved by explaining by what means this will be done, and even more demanding is proving the effort by indicating: 1) how many resources the company devotes to this effort; 2) how active the company is in this matter, and whether it stays as focused on the matter as initially announced; and 3) whether the effort has had any effect, e.g. on customer satisfaction, innovation output etc. According to Bray, (2010, p. 6), "relevant KPIs measure progress towards the desired strategic outcomes and the performance of the business model. They comprise a balance of financial and non-financial measures across the whole business model. Accordingly, business reporting integrates strategic, financial and non-financial information, is future-performance focused, delivered in real time, and is fit for purpose".

From an accounting perspective, the question of how to capture value creation and value transactions when value creation to a large extent goes on in a network

of organisations and not inside an organisation, as traditionally perceived, is problematic. Also, from a management perspective, the question of how to produce decision-relevant information is seriously challenged by business model innovations and the advance of new types of business ecosystems, for example based on crowd funding, social communities, virtual collaboration networks and a competitive landscape based on business model "innovation-ability".

## Empirical Examples of Business Models and Intellectual Capital

In this section, we introduce five examples that illustrate how intellectual capital becomes the value driver of different types of business models. We use Table 1 as a frame to illustrate how each business model has varying value drivers across the five dimensions introduced by Taran *et al.* (2016). Furthermore precisely which intellectual capital that lies behind those value drivers. In the articulation of the underlying intellectual capital behind the value drivers of each of the five dimensions, we have made note of the sub-class of intellectual capital according to Edvinsson and Malone's classification scheme (1997).

### Example 1: E-Bay

E-Bay applies a business model configuration called "The Mall", or "e-Mall" configuration. It was initially coined by Timmers (1998) as a collection of shops or e-shops, usually enhanced by a common umbrella. The e-Mall is similar to a physical mall; in that it consists of a collection of several shops - in this case web-shops. A closely related examples to this way of doing business are the merchant model (Rappa, 2001), one-stop low price shopping (Linder and Cantrell, 2000), and the shop in shop (Gassmann *et al.*, 2014). Revenues are generated from membership fees to the platform, transaction fees, and advertising. The typical value proposition of this business model configuration is that the web-shops benefit from professional hosting facilities and thereby are able to lower their costs and the complexity of being on the Internet. Furthermore, suppliers and buyers enjoy benefits of efficiency/time-savings, no need for physical transport until the deal has been established, and global sourcing.

Table 2 illustrates that this business model configuration requires intellectual capital across a broad array

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	One-stop convenient shopping Broad selection for consumers Larger potential customer base A platform for marketing	Market knowledge (HC) Marketing activities and databases (SC and CC)
Value Segment	Automated Internet-based platform Customer/consumer segment Vendors	Technical Knowledge (HC and SC) Customer Behaviour intelligence (CC) Retail function (SC) Relationships to vendors (CC and SC)
Value Configuration	Platform maintenance Web-platform	Technical knowledge (HC) Web Supplier relations (CC) Processes structures and ICT (SC)
Value Network	Supplier to platform activities Link with courier services	Customer behaviour intelligence (CC) Competitor intelligence (HC)
Value Capture	Commission on vendor sales	International contract law (HC)

**Table 2: Analysis of the e-Mall business model configuration**

of the sub-dimensions. The success of eBay is in part driven by its ability to create critical mass and global presence. Therefore, the human capital relating to international contract law and the value proposition of convenience offered through the customer capital perspective might be the prime intellectual capital of this business model configuration.

### Example 2: Dell

The business model configuration used by Dell is called Disintermediation. It cuts out the middlemen by delivering the offering directly to the customer through own retail outlets, sales force or Internet-based sales rather than through intermediary channels, such as distributors, wholesalers, retailers, agents or brokers. Related ways of doing business are the direct manufacturing model (Rappa, 2001), direct to consumer model (Weill and Vitale, 2001), and direct selling (Gassmann *et al.*, 2014). Dell had success by delivering directly to the customer a product or a service that had traditionally gone through an intermediary. They succeeded in modularizing their product, so that the customers could choose varying configurations of the computers they ordered, thus creating a feeling of custom-made despite the prices generally beating the market. This was possible because of the cost savings from the traditional intermediaries and because customers were prepared to buy at the website and wait for delivery instead of taking the computer home straight away from the shop.

Table 3 illustrates that the success of this business model configuration revolves around minimizing the challenges created by the lack of physical store. Therefore, the intellectual capital behind the customer service, CRM, and the logistics becomes of vital importance. While the ability to minimise the challenges is based on customer capital, logistics and modular manufacturing are related mainly to structural capital.

### 4.3 Example 3: Ryanair

A typical low-cost airline, the Irish aviation company Ryanair applies the No-frills business model configuration (Gassmann *et al.*, 2014; Taran *et al.*, 2016). In this way of doing business, organisations offer a low-price, low service/product version of a traditionally high-end offering; in this case commercial aviation; and this is in line with Christensen and Overdorf's (2000) characterisation of disruption (see also Markides, 2006). Similar labels for this way of doing business have been termed Low touch (Johnson, 2010), Add-on (Gassmann *et al.*, 2014); Low-price reliable commodity (Linder and Cantrell, 2000); Standardization (Johnson, 2010). The key value driver, low prices for low service is the value proposition put forth by Ryanair. Hence, customers buy the basic offering cheap, and pay for add-ons in the product/service offering. Like for example, choice of seats, priority boarding and baggage. A more in-depth account of Ryanair's business model and partnering with hotels, car rental services, airport transportation and bargaining power towards the, typically smaller, airports is offered

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Same product at lower prices Customized products Superior customer service Fast delivery	Modular design and manufacturing (HC and SC) Technical Knowledge (HC) IC for Service Departments and CRM solutions (CC) Consumer behaviour and needs (CC)
Value Segment	Online channels Segmented market Mass market reach	Customer intelligence (CC) Marketing activities (SC)
Value Configuration	Modularization Supply chain management Logistics Infrastructure management	Business economics and planning (SC)
Value Network	Companies further back in the value chain	Market knowledge (CC) Supplier relationships (CC)
Value Capture	Not specified, but creating customer loyalty and next purchase	Marketing Activities (SC)

**Table 3: Analysis of the disintermediation business model configuration**

by Casadesus-Masanell and Ricart (2010). In reality we might question who Ryanair’s most important customers are: the consumers or the airports? Ryanair achieves low costs at the smaller airports because they bring in high customer volumes and use this to bargain with.

Table 4 illustrates the intellectual capital of the No-Frills business model applied by Ryanair. For Ryanair, efficiency is important wherefore structural capital related to operating procedures become prime intellectual capital behind the value drivers. However, in

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Traditional high-end offering at low price	Knowledge about competitors (SC) Market knowledge (CC)
Value Segment	Self service Automated service Web platform Low and large base of the customer period Customers with low purchasing power	Customer Behaviour (CC)
Value Configuration	HR Low-cost infrastructure Standardized operating procedures (e.g. fast turnaround on the ground) Marketing Cost-control	Recruiting staff (SC)
Value Network	Cost-effective supplier network Suppliers of related services that gain from access to large customer base	Bargaining power (HC)
Value Capture	Low cost of suppliers from scale of operations Revenues based on add-on products and services	Supplier relations (CC) Customer needs (CC)

**Table 4: Analysis of the No-Frills business model configuration**

In addition to this, the human capital related to negotiating with airports and other types of strategic partners which ensures the conversion of critical mass in terms of customer numbers to lower costs is imperative to the survival of this particular company.

#### Example 4: Gillette

Gillette is renowned for its use of the “Bait and hook” business model configuration (Osterwalder & Pigneur, 2010). In this configuration companies seek to provide customers with an attractive, inexpensive or free initial offer that encourages continuing future purchases of related products or services. Besides Gillette, this is a much-used tactic in the printer business, take for example HP inkjet. This business model configuration is also known as Razors and Blades (Linder and Cantrell, 2000; Johnson, 2010; Gassmann *et al.*, 2014) or Lock-in (Gassmann *et al.*, 2014). The key of this configuration is the close link between the inexpensive or free initial offer and the follow-up items on which the company earns a high margin as well as related product/service accessories. The key value driver is the achievement of lock-in and thereby also continued revenue streams. Table 5 illustrates that this particular way of doing business relies heavily on customer capital and structural capital. The key to success for Gillette is the global presence of consistent and high-quality products and

the ability of protecting the brand and the intellectual property. Procter & Gamble, who own the Gillette series, are able to accomplish this because of their sheer size. The global presence coupled with the lock-in mechanism of the business model ensures that customers can turn their purchase of shaving equipment into a habit, regardless of where they are in the world.

#### Example 5: Skype

Skype applies a Freemium business model configuration. The term Freemium was first coined by Anderson (2009) and is in essence a business model that utilizes two types of customer segments. One segment is interested in a basic service for free, while the second, premium segment, is willing to pay for a more advanced product partly because the freemium segment provides critical mass to the business model. This way of doing business has similarities with the Inside-out and No-frills business model configurations. The Inside-out business model configuration (Osterwalder & Pigneur, 2010) is used by companies that sell their own developed R&D (i.e. intellectual properties or technologies which are under-used inside the company).

Table 6 shows that the structural capital of Skype is important to the functioning of the platform service and that the human capital that came up with the idea

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Low price or free initial offer Quality System	Market understanding (CC) Marketing a consumer product (SC)
Value Segment	Customers sensitive to initial offer	World Wide Market (CC) The brand (SC)
Value Configuration	Brand Patents Developing follow-up products and accessories	Quality Control (SC)
Value Network	Marketing Production Logistics Retailing	Understanding retailers' needs for brands (CC)
Value Capture	One-time low-margin sale followed by frequent high-margin sales	Consumer behaviour (CC) Consumer loyalty (CC) Consumer needs (CC)

**Table 5: Analysis of the Bait and Hook business model configuration**

Value dimension	Examples of value drivers	Examples of underlying IC
Value Proposition	Market coverage/market reach of the web-platform (Structural Capital) Free Internet-based call-service Cheap additional services	Market understanding (CC) Find uncovered needs (HC) Go-to-market strategy (HC)
Value Segment	Knowledge about premium user service requirements (Human Capital) Conversion rate of free customers to paying customers (Customer Capital) Degree of self-service for customer enquiries (Customer Capital) Connects friends on a common communication platform	Technical knowledge (SC) Market knowledge (CC) User needs and behaviour (CC)
Value Configuration	Platform management (Structural Capital) Software development Automated services	HR (HC) Technical knowledge (SC and HC)
Value Network	Distribution partners Online payment service partners Phone companies Handset/headset partners	Technical knowledge (SC and HC) Infrastructure (SC)
Value Capture	Subscription fees from premium customers (Customer Capital) Revenues from advertising to free customers (Customer Capital)	Customer behaviour (CC) Marketing activities (SC)

**Table 6: Analysis of the Freemium business model configuration**

was central. However, it also illustrates that the notion of the double-sided platform of free and premium customer segments in the form of customer capital are vital for the success of Skype. This is because the most important aspect of the success is the ability to create the critical mass that allows the Freemium model to flourish. It was clearly the human capital that formulated the go-to-market strategy that turned Skype into the company it is today. The market traction created by the founders ensured that Skype became synonymous with making phone calls over the Internet, best exemplified by the expression: “Let’s Skype”!

## Discussion and Conclusions

This chapter argues that intellectual capital is the platform of any business model and its value creation and that without intellectual capital there is no value creation. The examples applied above illustrate the relationship between each of these distinct business model configurations, their respective value drivers and the intellectual capital elements that drive them.

These examples from five distinct business model configurations also illustrate that the value drivers of business models are intellectual capital entities at different levels of organisation. Individuals have relevant knowledge and work with other staff members in functional departments. An organisation is made up of a number of interacting functional groups and departments, that together form the whole organisation. Organisations, suppliers and buyers, act in a market and the price and volume of products are ultimately determined by the so-called market forces. All of these are results of an emergent process. Through the organisation, right from the individual employee to the market level; novel properties emerge at each level with new dimensions of intellectual capital. Hence, this chapter provides case study evidence to support the arguments of Nielsen and Dane-Nielsen (2010). Interaction and communication among individuals creates the output of the work done in the functional departments. Further, cooperation between the necessary functional departments and groups will create the final output of the organisation that is valued by customers because it does a job for they are willing to pay for (Osterwalder *et al.*, 2014). However, the final monetary

value of the output from an organisation is determined by the market in which the organisation is operating.

This emergentist perspective is research perspective which can be applied to many fields of research. For example, the notion of emergentism is used as a research perspective within biology and medicine (Kim, 1999) and also within philosophy (Potochnik, 2010). Emergentism is a discipline within Mereology the study of parts and wholes. Emergent phenomena within the social space have been studied within sociology since the 1920s (Sawyer, 2010). This perspective argues that people, for example employees, act in collective manners to create new phenomena as collective knowledge and collective action which the individuals do not hold by themselves. This is the foundation for claiming that intellectual capital at higher levels in a hierarchical structure, for example an organisation, is different from the knowledge held by the individual staff members in the organisation. In doing so, this chapter offers a theoretically grounded lens for analysing and understanding business models by combining the perspectives of intellectual capital and emergentism from Nielsen and Dane-Nielsen (2010).

Also our analyses uncovers several of relevant action points for future studies that should be undertaken in order to further our understanding of intellectual capital in action, as well as business models. This raises the question of the relationship between business models and different level of organisation. Certainly, in our examples in section 4 we see that these business model configurations combine intellectual capital on several levels of organisation. But is that always the case? And can we talk of business models as organisational models or business model on an industry level. Furthermore, we find relevant connections between the prevailing understanding of business models based on certain value propositions to customers and the market-level of our emergentist perspective. Here there is a fruitful avenue to follow in combining business models and market perspectives, for example by viewing suppliers and buyers as non-managed organisations and markets as informal institutions.

A practical contribution of this chapter, besides the inspiration for managers of how to relate intellectual

capital to the value drivers of specific business model configurations (Nielsen *et al.*, 2017), is that business models as managerial concepts might serve different purposes. Once the management team of a company has determined which business model configuration they are competing with, this information can be used for multiple purposes. One such purpose is a managerial agenda. It entails managing, leading and controlling the organisation and establishing relationships with key strategic partners. Another purpose is communication. Here a wide array of potential stakeholders comes into play including investors, employees, municipalities, customers and strategic partners, and the notions of business models have proven themselves successful for aligning the views among such stakeholder groups on how the company works. Finally, there is also the business development purpose, also denoted as business model innovation. This perspective has received much attention from entrepreneurs in recent years but has also entered into the established business sector and the academic curriculum.

The responsibility for managing, communicating and innovating firms and their business models ultimately lies with the management team and the board of directors, while the use of the resulting analyses should be applicable to the whole organisation. The application of business models may have implications on multiple time-horizons. On the short-term basis, the notions of business models can help to evaluate the efficiency with which a company engages with customers. In the medium-term business models help companies to decipher whether customers are willing to pay for delivered value and how well the company utilizes strategic partners. On a more long-term basis, business models can help companies in understanding how to improve their overall concept for making money. Finally, it is evident that business models can serve a number of different "managerial agendas". As seen above, business models might be concerned with managing, controlling and making the organisation efficient. However, business models might also serve purposes of managerial sensemaking in an innovation perspective (Michea, 2016), or open up for new entrepreneurial possibilities (Lund and Nielsen, 2014).

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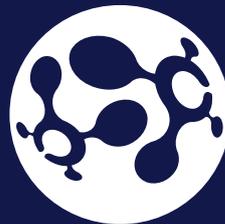


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